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ABSTRACT

This national survey of the state of the nation's museum collections investigates collection care policies and practices, conservation issues, and private sector and federal support for museum needs. It consists of two major projects and four additional information gathering projects. The Museum Collection Survey is designed to examine all major aspects of collections care and includes information on facilities, personnel, financial support, budgeting, and collection object information. It includes data from 364 museums of various types and budget levels, over 100 supporting statistical tables, a copy of the survey questionnaire, and reports of 12 on-site follow-up assessment visits. The Survey of Conservation Professionals and Facilities includes information on geographic distribution of conservation resources, areas of conservation specialization, educational backgrounds of conservation professionals, facilities and equipment, staff profiles, and research activities. This project investigates both living and non-living collections through a conservation professionals questionnaire (589 respondents), and a conservation facilities questionnaire (120 respondents). Copies of the questionnaires and 43 graphs and charts are included. The four additional information projects are: (1) "Conservation Information and Training Programs for Museum Professionals and the General Public"; (2) "Private Sector Support for Collection Needs"; (3) "Federal Funding of Conservation and Collections Management in Museums"; and (4) "Methods of Inventory Control and Collections Management." (PPB)

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COLLECTIONS MANAGEMENT, COLLECTIONS MAINTENANCE AND CONSERVATION

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INTRODUCTION

In making a fiscal 1984 appropriation to the Institute of Museum Services (IMS), the U.S. Congress provided funds for a new initiative in conservation in addition to support for the Institute's ongoing program of general operating support. In the same bill, at the urging of the House of Representatives, $150,000 was allocated to the IMS for a study of collections care needs, to be undertaken by the American Association of Museums (AAM) in cooperation with the National Institute for the Conservation of Cultural Property (NIC) and the American Institute for Conservation (AIC). The Congress, responding to a need for statistical information regarding how museums care for the collections entrusted to them, requested this study so that the Institute of Museum Services and other agencies supporting collections care activities might be presented with quantifiable and documented evidence of collections care activities within museums.

Two major research projects and four related information-gathering projects form the study. The largest components of the study are: Project 1, the Museum Collections Survey; and Project 2, a Survey of Conservation Professionals and Facilities. The four additional projects complement the statistical data from the surveys, providing information on conservation training and awareness programs, collections management systems, as well as public and private programs that support collections care.

The six projects are listed and described briefly below. The report of the study includes a section on each of these individual projects. The purpose, methodology, professional participants and findings of each project are presented in detail in the report.

THE SURVEYS

Project 1: The Museum Collection Survey

This project is the component of the study designed to examine all major aspects of collections care within the institutional context of museums. To gather this information, a detailed questionnaire was developed and distributed to a representative sample of the nation's museums. The results of the questionnaire provide statistical information regarding how museums care for their collections. Major areas of investigation include the following: conditions and types of facilities that house museums' collections, collections care personnel, financial information regarding sources of support and allocations of expenditures for collections care activities, collections management policies, numbers and conditions of objects in the collections, information and training programs in collections care, and museums' priorities regarding collections care over the next decade.

As a supplement to the survey, visits to 12 museums were undertaken to assess collections care activities on-site. Professionals with experience in on-site surveys and collections care were selected to visit and review the museums' collections and facilities. The findings of the on-site surveys provide examples of collections care practices within museums, and present a context in which the statistical information resulting from the Museum Collections Survey may be placed.

Project 2: A Survey of Conservation Professionals and Facilities

The National Institute for Conservation, working with the American Institute for Conservation, surveyed the conservation profession in order to collect statistical information about conservation. NIC and AIC worked closely with representatives of the American Association of Zoological Parks and Aquariums (AAZPA), the American Association of Botancal Gardens and Arboreta (AABGA) and other organizations that serve the interests of living collections, and developed survey instruments to gather information on the conservation activities of individuals and facilities that care for living as well as nonliving collections.

Principal areas of investigation addressed in this project include the following: the geographic distribution of conservation resources, areas of conservation specialization, educational backgrounds of conservation professionals, educational activities offered by conservation facilities, budgets of conservation facilities and of their host institutions, staff profiles, conservation and analytical equipment that is needed or already acquired, research activities, institutional policies affecting conservation, and general needs of the collections and of the people and facilities that conserve them.

ADDITIONAL INFORMATION-GATHERING PROJECTS

Project 3: Conservation Information and Training Programs for Museum Professionals and the General Public

This project was designed to gather examples of programs conducted by museum-related organizations that provide information and training for museum personnel and the general public regarding collections care. Service organizations, regional arts and/or humanities groups, regional conservation centers, historical societies, state agencies and museum associations were asked to submit examples of any programs that they offer. Based on these responses, a list of information and training programs was compiled. The list demonstrates that information and training programs are as diverse as the sponsoring organizations themselves. They range from one-time lectures to workshops of several days duration.

Project 4: Private-Sector Support for Collections Needs

This project reviews private-sector support for conservation and collections management. Information was obtained from the Foundation Center in Washington, D.C., regarding independent foundations, corporate foundations and local organizations that are listed in the Center's records as contributors to conservation and collections management. The report of these findings presents examples of the projects funded, types of museums and collections served, and the level of support in dollars by contributing organizations that are on record.

Project 5: Federal Funding of Conservation and Collections Management in Museums

This project summarizes federal program support for the care of museums' collections provided by each of the following federal agencies: the Institute of Museum Services, the National Endowment for the Arts, the National Endowment for the Humanities, the National Museum Act, the National Science Foundation, and the Department of Education. Programs in existence through fiscal 1984 are reviewed. The report describes each of these programs and also provides a brief history of the support that each program has given to collections needs.

Project 6: Methods of Inventory Control and Collections Management

The objective of this project was to gather from the information in the museum collections survey and from published studies an overview of methods of inventory control in use by museums. The information presented is brief, but useful in that it highlights some existing methods of recordkeeping, including cooperative efforts and computerized systems.

Project Staff:

Lawrence Reger, Director
American Association of Museums

David Shute, Executive Director
National Institute for Conservation

Jane Slate, AAM/NIC Project Director
Program Coordinator, National Institute for Conservation

Susan Bandes, Grants Officer
J.Paul Getty Trust
(formerly Project Director, AAM)

Maureen Robinson, Legislative Coordinator
American Association of Museums

COLLECTIONS MANAGEMENT, MAINTENANCE AND CONSERVATION

A SUMMARY OF THE STUDY

INTRODUCTION

Purpose of the Study

"Collections Management, Collections Maintenance and Conservation" is a study of the state of the nation's collections that are entrusted to museums. The study was undertaken by the American Association of Museums (AAM) in February, 1984, and was concluded in June, 1985. The AAM, under contract to the Institute of Museum Services (IMS), coordinated the study and worked with the National Institute for Conservation (NIC) as subcontractor. These two organizations, with direction from an advisory panel, consulted representatives of the American Institute for Conservation (AIC), the American Association of Botanical Gardens and Arboreta (AABGA), and the American Association of Zoological Parks and Aquariums (AAZPA), on the development of surveys and other methods of gathering information that investigate collections care policies and practices within museums. The cumulative findings of the study highlight current conditions of collections and provide an overview of the resources that are available to museums as they care for their collections.

The study was conducted in response to a mandate from the U.S. Congress for the participating organizations to research and report on the nation's ability to care for its collections. The Congress, responding to a need for statistical information on collections care, requested the study so that agencies that support conservation might be presented with factual information. During the period of the study, new data regarding collections care has been gathered and sources of information have been identified. It is hoped that the results of the study will contribute concretely to the growing body of knowledge of conservation needs in this country, providing a basis on which to formulate constructive policy.

Members of the advisory panel for the study, the project staff and other participating professionals are listed in the appendix.

Methodologies

The study is composed of six projects that are discrete initiatives which examine collections care issues. Two of the six projects are national surveys of museums and of conservation professionals and facilities. The four additional projects examine conservation training and information programs, methods of inventory control of collections, private sector support of collections care, and federal support for collections care activities of museums.

THE SURVEYS

The Survey of Museums

The "Museum Collections Survey" was a questionnaire distributed to 716 museums. Responses from 364 museums were tabulated. The attempt was made to survey a sample of institutions that statistically represent the nation's museums with regard to budget and discipline. Standard sampling methods were employed to achieve a statistical analysis of collections care within the museum universe. The universe was identified through studies conducted previously, and included museums representing all disciplines and budget sizes of $50,000 or more.

The survey examined all major collections care activities within museums -- activities that are known as the management, maintenance and conservation of the collections. Collections management involves the control of the collections and includes the management of collections records. Collections maintenance includes basic activities that insure the security and maintenance of the physical environment. Museum administrators, curators, registrars, security and maintenance staff are personnel with responsibilities in these areas. Conservation includes activities that examine, preserve and restore the objects or populations. Personnel associated with these responsibilities are varied and may range from conservators who restore paintings, to veterinarians who research species survival methods. The questionnaire investigated these many facets of collections care, and requested information about the financial resources supporting these activities.

The Surveys of Conservation Resources

Two surveys were distributed to examine conservation resources. The "Conservation Facilities Questionnaire" was distributed to 298 conservation facilities; 120 responses were tabulated. The "Conservation Professionals Questionnaire" was distributed to 1,879 individual professionals; 589 responses were tabulated. Previous studies of conservation have been few, and none have attempted comprehensively to identify these resources on a national level. Consequently, a universe of laboratories and professionals was identified for the first time. The universe included all known conservation resources that serve nonliving collections. Because conservation is interpreted broadly within the context of living collections, only a sample of these resources was identified for use in the surveys. Advisors to the study agreed that information obtained from the surveys of conservation resources serving living collections will assist in the development of definitions within these disciplines (e.g., botanical gardens, zoos and aquariums).

These surveys examined resources that operate internally and externally to museums. The "Conservation Facilities Questionnaire" was distributed to laboratories that are departments within museums, as well as laboratories that are incorporated regionally on a cooperative basis, or that are operated as private businesses. The "Conservation Professionals Questionnaire" was distributed to individuals who are employed by museums, and to individuals who are employed by cooperative laboratories or private businesses that serve museums.

Identifying appropriate conservation resources is a major concern of museums as collections care is planned. Conservation by nature is a highly specialized activity. Professionals who conserve paintings may not be qualified to conserve textiles or archeological materials. The conservation of living collections requires professional expertise in the propagation of species or populations. The questionnaire requested information on conservation specializations, as well as information regarding the geographic location of resources. Other areas of investigation were education and training, sources of funding, equipment and staff profiles, research activities, and institutional policies that affect conservation. Participants were also asked to address the needs of the collections and of the people and facilities who conserve them.

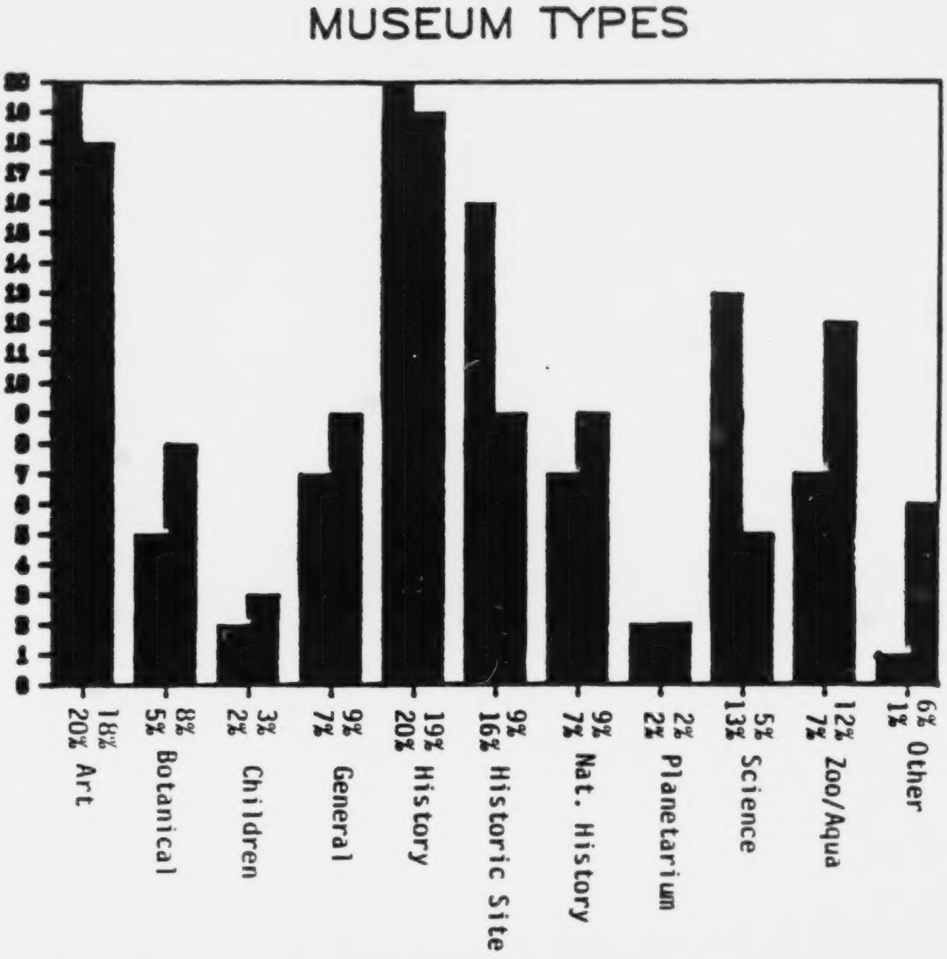
Some highlights from the surveys are presented below. For additional information from the surveys, as well as the results of the other projects, the reader is directed to the complete report of the study. The report may be obtained from the American Association of Museums, 1055 Thomas Jefferson Street, Northwest, Suite 410, Washington, D.C. 20007.

Highlights from the Survey Findings

Museum Disciplines

The nation's museums are diverse, ranging from art museums to zoological parks. Figure 1 shows, by museum discipline, the universe of museums and the participants in the "Museum Collections Survey". For example, the first pair of bars shows that 20 percent of museums in the universe are art museums, and that 18 percent of the respondents to the survey are art museums. Responses indicated that some museums have difficulty in selecting a single category of discipline. Consequently, respondents in the "other" category were larger than anticipated.

Figure 1

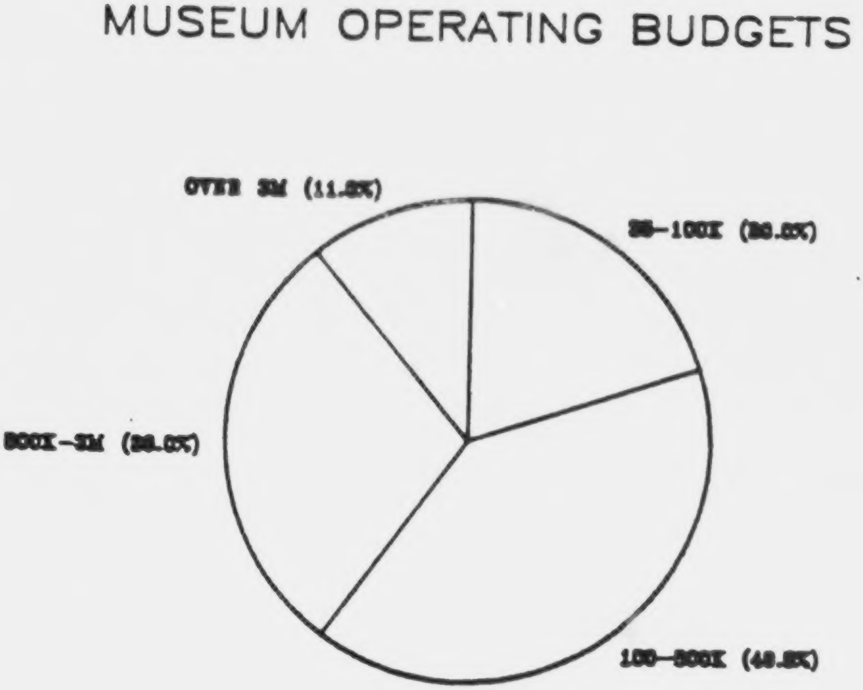


Color Key: Blue = Percentage of Universe
Black = Percentage of Respondents

Financial Information

The "Museum Collections Survey" requested information on the annual, operating budgets of museums. A survey of institutions representing a wide range of budgets was considered crucial in examining collections care within museums. Even though questionnaires were distributed to museums with estimated budgets of at least $50,000, participating museums reported operating budgets ranging from $35,000 to $53,000,000. Reported budgets are presented in Figure 2, indicating that sixty percent of museums reported budgets from $35,000 to $100,000.

Figure 2



Museums were asked to report on funding patterns that affect collections care activities. Considering inflationary factors, 44 percent of museums reported an increase in their funding for conservation over the last five years. Thirty-six percent reported a stabilization and 19 percent reported a decline in funding for conservation during the same period.

The "Conservation Facilities Questionnaire" requested information on conservation budgets. Reported budgets ranged from $1,000 to $5,757,000. The larger budgets (greater than $1,550,000) were reported by facilities that conserve living collections. In fact, some of these facilities reported their entire institutional operating budgets as their budgets for conservation. Interpretations of this issue varied greatly and demonstrated the lack of consensus within the field regarding conservation within the context of living collections.

Conservation budgets may be most meaningful when examined within the context of institutional budgets. Fifty-six percent of conservation laboratories serving nonliving collections reported budgets that are less than 5 percent of the parent institution's operating budget. Eighty percent reported budgets that are less than 25 percent of the institution's operating budget. Conservation laboratories serving living collections reported budgets that are more often than not (64 percent of respondents) 25 percent or less of the institution's operating budget.

The "Conservation Facilities Questionnaire" also requested information about funding sources. Conservation laboratories are supported traditionally by a combination of internal and external sources. Figure 3 presents sources of funding reported by conservation laboratories serving nonliving collections. Figure 4 presents funding sources of laboratories conserving living collections. Laboratories that are private businesses reported that almost all of their income (89 percent) is derived from fees for services. Private businesses are not reflected in the following charts.

Figure 3

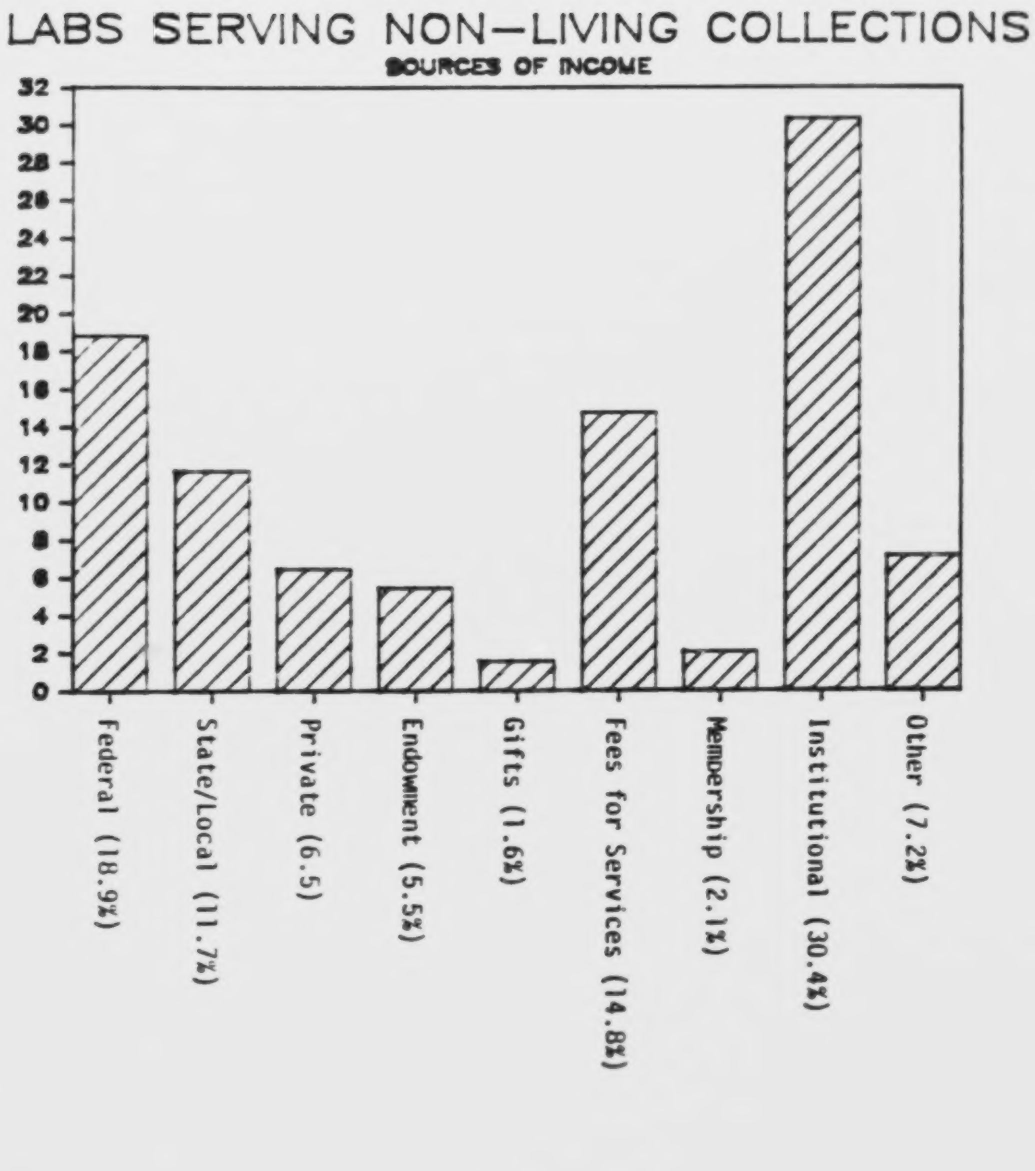
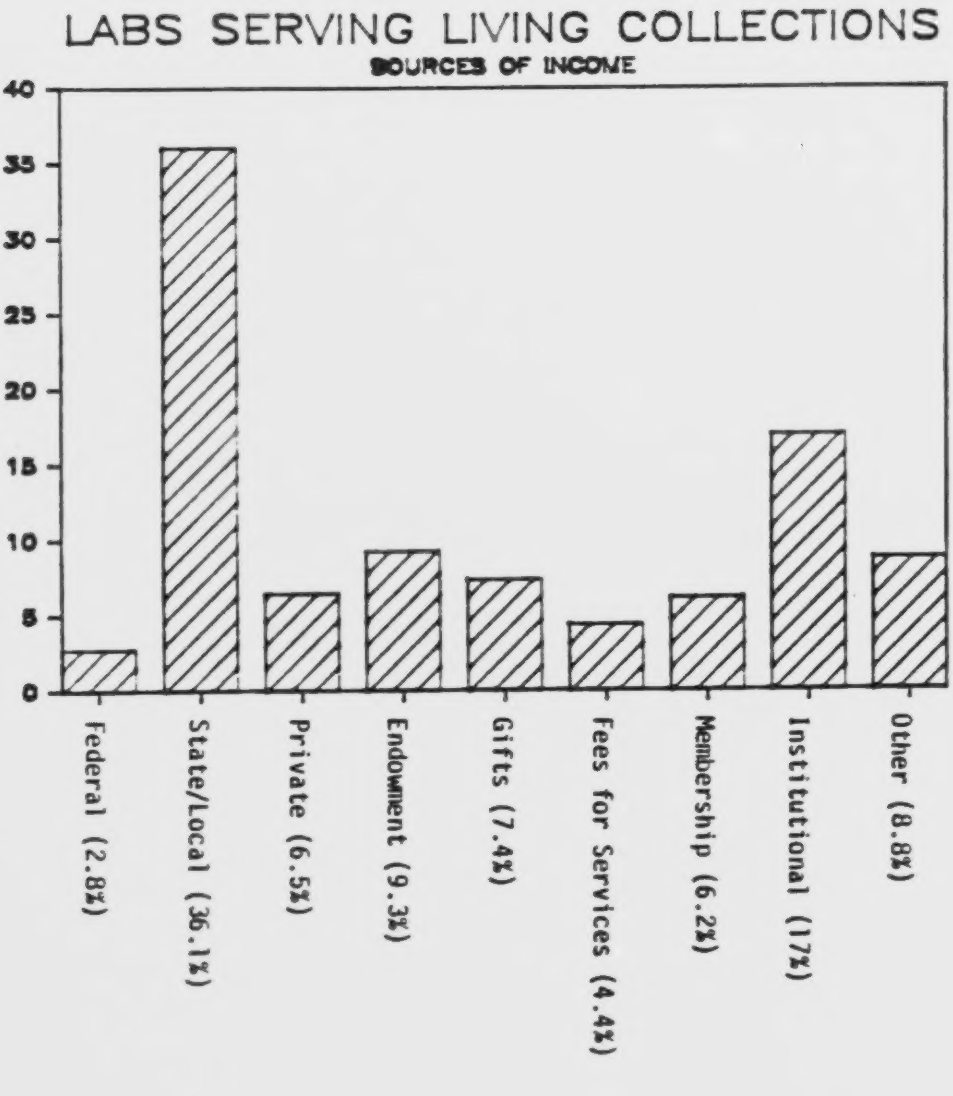

LABS SERVING NON-LIVING COLLECTIONS
SOURCES OF INCOME
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Federal (18.9%)
State/Local (11.7%)
Private (6.5)
Endowment (5.5%)
Gifts (1.6%)
Fees for Services (14.8%)
Membership (2.1%)
Institutional (30.4%)
Other (7.2%)

Figure 4


LABS SERVING LIVING COLLECTIONS
SOURCES OF INCOME
40
35
30
25
20
15
10
5
0
Federal (2.8%)
State/Local (36.1%)
Private (6.5%)
Endowment (9.3%)
Gifts (7.4%)
Fees for Services (4.4%)
Membership (6.2%)
Institutional (17%)
Other (8.8%)

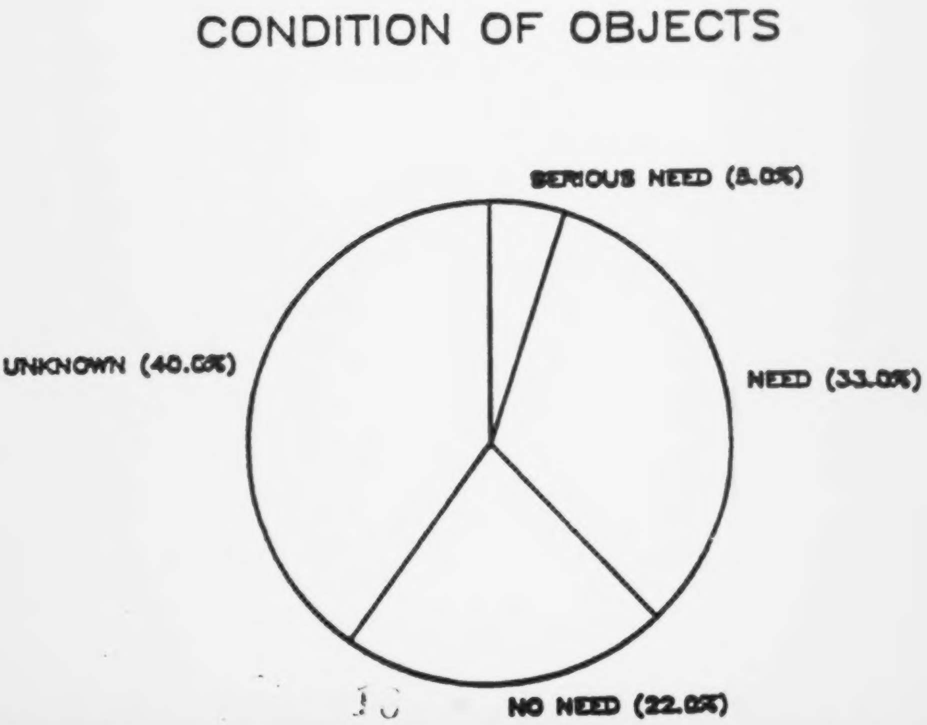
The Collections

Museums were asked to provide information on the numbers and conditions of the objects in their collections. The questionnaire listed 37 categories of objects within museums, for which 133,572,140 objects were reported. More than one million objects were reported in each of the following types of collections: anthropology, archeology, books, documents, geology, philatelical, preserved animals, photographic negatives, photographic prints, plants (live and preserved), and works of art on paper. Over half of the responding museums reported collections that include the following types of objects: books, ceramics and glass, furniture, paintings, photographic prints, textiles and works of art on paper.

To determine the conditions of objects, collections are surveyed by collections care personnel. Thirty percent of the participating museums reported that they have surveyed none of their collections for conservation purposes. Thirty-six percent have surveyed half or less of their collections; 34 percent have surveyed more than half of their holdings.

Museums were asked to provide information regarding the conditions of the collections. Figure 5 illustrates the overall response to conditions defined in the questionnaires. "Serious need" was defined as the threat of partial or complete loss of the object unless it is treated soon. "Need" was defined as the need of routine treatment. "No need" was defined as the lack of need for treatment. Respondents reported that the condition of 40 percent of the collections is unknown.

Figure 5



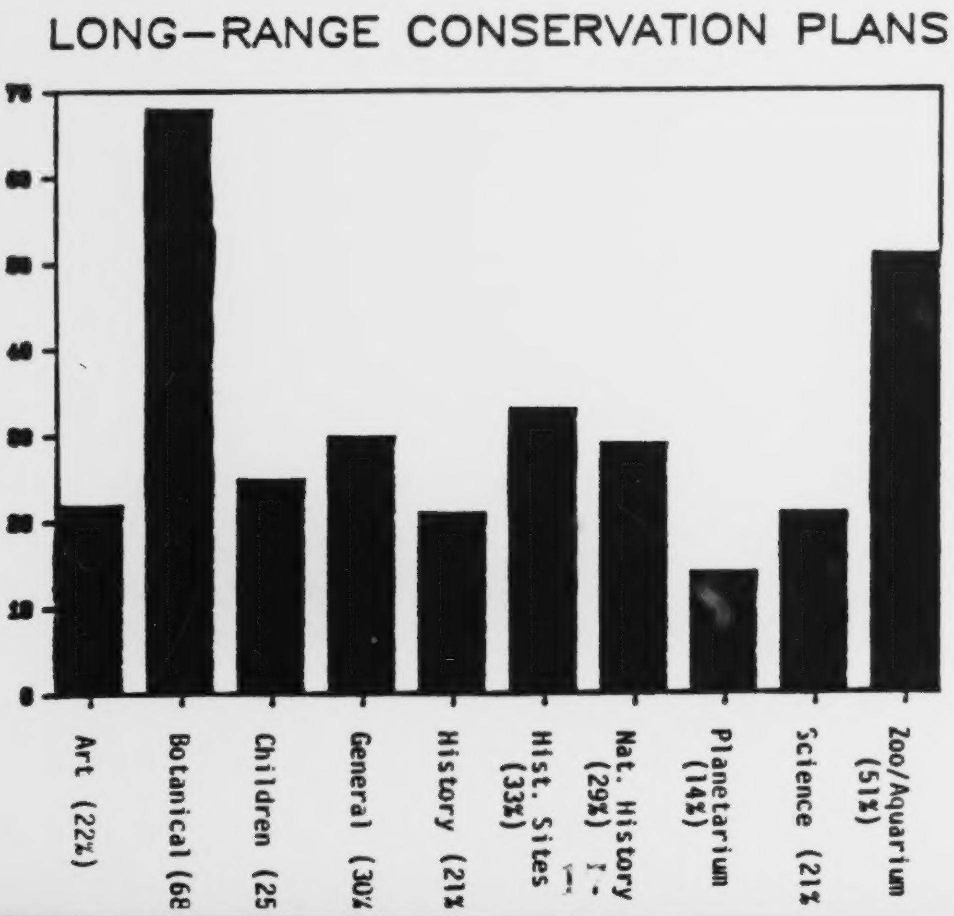
Collections Management

The "Museum Collections Survey" addressed collections management issues. Museums reported that they exhibit 44 percent of their collections on a regular basis. This means that 56 percent of the collections must be stored away from exhibition areas that are open to public view. Collections are managed with various record-keeping systems. Museums reported that they have inventoried 77 percent, have catalogued 68 percent, and have photographed 30 percent of their collections. Fifty-three percent of the inventories and 23 percent of the catalogues were reported to be current. When asked to acknowledge activities that are "undertaken to satisfaction," 71 percent of museums reported the "registration of collections" and 64 percent reported the "cataloguing of collections." Twenty percent expressed satisfaction with their "computerization of inventory and catalogue records."

Long-Range Plans for Conservation

The surveys requested information about institutional policies of museums that affect the care of collections. Unlike some collections care efforts that are on-going activities within museums, conservation often has the character of special projects for which outside resources are solicited. Conservation requires the acquisition of specialized expertise and equipment, and may demand the support of special funds or gifts. Twenty-eight percent of museums reported that they have written long-range plans for conservation. Establishing an institutional policy may be a museum's first step in establishing a commitment to conservation. Figure 6 presents percentages of museums by type that reported having long-range plans for conservation.

Figure 6



PROJECT 1: THE MUSEUM COLLECTIONS SURVEY

TAB D

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MUSEUM COLLECTIONS SURVEY

INTRODUCTION

Project 1, the Museum Collections Survey, is the component of the study designed to examine all major aspects of collections care within the institutional contexts of museums. To gather this information, a detailed questionnaire was developed and distributed to a representative sample of the nation's museums. The results of the questionnaire provide statistical documentation regarding how museums care for their collections. This effort establishes, for the first time, a base of information that includes the following areas: conditions and types of physical facilities that house museums' collections, collections care personnel, financial information regarding sources of support and allocations of expenditures for collections care activities, conditions and numbers of objects in collections, conservation activities, collections management policies, museums' activities related to information and training programs in collections care, and the identification and ranking of museums' priorities regarding collections care over the next decade.

As a supplement to Project 1, the American Association of Museums coordinated visits to 12 museums for the purpose of assessing collections care activities on-site. Professionals with experience in on-site surveys were selected to visit and review the museums' collections and facilities. Through direct contact with staff and through personal observation, the visiting teams learned about the institutions' successes and difficulties in providing care for their collections. The findings of the on-site surveys do not provide additional statistical analysis regarding collections care, nor do they replace any of the statistical data resulting from Project 1. Rather, they provide examples of collections care practices within museums, and present a context in which the statistical information can be placed.

Many activities impact directly on the care of collections within museums. The maintenance of collections includes basic activities that relate to the security and maintenance of the physical environment of museums. These activities range from the monitoring of environmental conditions and standards to the maintenance of collections protection systems such as fire and burglar alarms. The management of the collections involves the control of the collections and includes the management of collections records. Museum administrators, curators, registrars, security and maintenance staff are among the museum personnel who are associated with these policies and procedures. The conservation of the collections involves activities regarding the examination, preservation and restoration of the objects or populations. Museum personnel with these responsibilities are varied and may include conservators, conservation technicians and scientists, as well as preparators, veterinarians, horticulturists, research scientists and curators. The results of the Museum Collections Survey provide statistical information on these many facets of collections care practices within the sample of museums represented.

DEVELOPMENT OF THE SURVEY INSTRUMENT

The survey instrument used by the AAM was developed in consultation with museum and conservation professionals, including representatives of national associations of special museum disciplines. Development of the questionnaire began in January, 1984, and was completed in July, 1984. The calendar of activity, the survey instrument and the letters requesting participation in the study are presented in Appendix C.

A preliminary draft of the initial areas of investigation for the survey was developed by the project staff and reviewed by AAM staff members of the publication and professional standards programs, including the museum accreditation and museum assessment programs. The Advisory Committee to the study held a meeting to review the areas of investigation and to advise the project staff on the development of a questionnaire. Members of the Advisory Committee are listed in Appendix D.

The project staff consulted statisticians, social scientists, and representatives of the American Association of Botanical Gardens and Arboreta, the American Association of Zoological Parks and Aquariums, the National Institute for Conservation and the American Institute for Conservation to refine further the survey document. These groups reviewed the draft questionnaire and assisted in developing comparable interpretations and definitions for staff positions, institutional activities, and physical resources within organizations housing living and non-living collections. Supplemental questions were developed specifically for zoological parks, aquariums, botanical gardens and arboreta.

The organization and format of the survey was then reviewed by the American Institutes for Research (AIR), the professional firm under contract to the American Association of Museums to develop the sample of museums used in the survey and to maintain and analyze the survey data. The questionnaire was tested at eight museums in the Baltimore/Washington/Richmond area. These museums were selected as test sites because of their geographic proximity to the AAM office and their accurate reflection of the various kinds of institutions selected by AIR for inclusion in the sample. In addition, a historic site was asked to review the questionnaire in terms of its applicability to museums with numerous buildings and sites. The museums that cooperated in the testing of the survey instrument agreed to participate anonymously and therefore are not listed here.

During June and July, 1984, the U.S. Office of Management and Budget reviewed the questionnaire which had been submitted by the Institute of Museum Services (IMS) for clearance. The questionnaire was then revised to reflect the procedures and practices of the Office of Management and Budget. The questionnaire received clearance and was distributed in July to a sample of the nation's museums.

SURVEY METHODOLOGY

To collect quantifiable information on museums' abilities to care for their collections, the survey instrument was distributed to a sample of museums. The museums selected for inclusion in the sample are representative of the diversity of U.S. museums with regard to discipline, or type of museum, and budget size. The categorizations and budget sizes at the time of selection were based largely on listings in the 1978 Museum Universe Survey -- the only comprehensive listing of museums and their budgets.

Of the 4,609 museums listed in the 1978 survey, 2,812 (or 61 percent) reported budgets under $35,000. As a consequence of the fact that museums with budgets below $35,000 are often without permanent staff and possibly unable to participate in time-consuming and detailed surveys, museums falling below this budget level in 1978 were not sampled in the 1984 AAM survey. The $35,000 figure was adjusted by 1.5 to reflect 1984 dollar equivalents. Therefore, the sample drawn for the 1984 AAM survey does not include institutions with estimated budgets under $50,000. The assumption was made that budgets of $35,000 in 1978 are around $50,000 in 1984. Budgetary adjustments were not made in 1978 budgets of $50,000 or more. The adjustment was made only for the purpose of determining museums with budgets below the level deemed relevant to this study.

All museums with 1978 budgets of $3 million or more were included in the sample because the assumption was made that these museums house a large proportion of the nation's collections. A high response from this audience was considered important to a successful analysis of collections care.

Museums were divided into ten categories by discipline. With the exception of the inclusion of all museums with budgets of $3 million or more, the sample was chosen to reflect a range of budget levels within all types of museums. This information was also based on the 1978 Museum Universe Survey.

The museums included in the sample represent all five AAM geographic regions in the United States: New England, Northeast, Southeast, Mountain-Plains and West. The regional sampling was achieved by the systematic selection of museums by zip code. This selection insured that museums in all five geographic regions were included in the sample. This selection does not represent necessarily the geographic disbursement of museums.

The final population considered in the 1984 study includes 2,080 museums because the following adjustments were made in the population of the 1,797 museums with budgets listed of $35,000 or more in the 1978 survey:

50 new museums (founded since 1978) were added;

215 institutions primarily housing living collections were added to reflect the fact that advisors to the study who represent the American Association of Zoological Parks and Aquariums and the American Association of Botanical Gardens and Arboreta felt that these audiences were under-represented in the 1978 population;

18 museums with large budgets that were not listed in the 1978 universe for reasons unknown were added.

The technical explanation of the sampling method is attached in Appendix B.

RESPONDENTS TO THE SURVEY

The advisory panel and project staff estimated that the response to the survey would be greater than 50 percent. A total of 716 questionnaires were distributed in an attempt to receive 400 completed responses. A total of 410 responses were received. Of these, 46 were not used because of the following reasons: the information was incomplete (12 museums), the institutional operating budget was below $35,000 (12 museums), or the institution did not have information relevant to the study (22 museums).

Although responses from 364 museums were received that were suitable for analysis, the results of each question are often based on responses that total numbers other than 364. The analysis of each question is based on responses to that question only and reflect the following anamolies inherent in the survey.

1) 28 museums indicated operating budgets that were between $35,000 and $50,000. These respondents are included only in the analysis presented in a supplemental section of the report regarding small museums.

2) Of respondents with budgets of $50,000 or more, 22 museums were unable to be coded successfully in one of the ten categories of museum disciplines listed in the questionnaire. All questions that were analyzed according to type of museum do not reflect these museums that were categorized in the museum type "other".

3) Every respondent did not answer every question in a way that could be analyzed statistically.

The number of respondents per question is provided in the analysis of each question. The following charts illustrate the respondents, first by budget level and then by museum type.

Respondents by Budget Level

	Number in Sample	Number Distributed	No. of Responses	% of Responses
$35,000-$100,000	820	250	73	29.2%
$100,001-$500,000	957	322	144	44.7%
$500,001-$3,000,000*	251	101	107	105.9%
over $3,000,000	52	43	40	93%
Totals	2,080	716	364	50.8%

* Not all participating museums responded in the budget categories anticipated. 101 questionnaires were distributed to museums thought to be in the third category, but 107 museums responded.

Respondents by 1978 Museum Types

	Number Distributed	Number of Responses	% of Response by Type
Art Museums	107	66	61.6%
Botanical Gardens	68	29	42.6%
Children's Museums	26	12	46.1%
General Museums	66	31	46.9%
History Museums	99	68	68.6%
Historic Sites	86	34	39.5%
Natural History Museums	69	31	44.9%
Planetariums	26	8	30.7%
Science Museums	84	20	23.8%
Zoos and Aquariums	85	42	49.4%
Total	716	341	

Twenty-three museums (22 with budgets of $50,000 or more, and 1 with a budget below $50,000) did not categorize themselves in any of the museum types listed above. When added to the 341, the total responses equal 364.

Non-Respondent Museums

Two hundred and ninety museums did not respond despite a reminder letter and telephone call. Non-respondent museums reached by telephone during the survey process gave the following reasons for not responding:

no time to complete questionnaire
no staff available to complete questionnaire
museum no longer exists
museum is in process of relocating
questionnaire is not appropriate for museum to answer
museum does not exhibit or own collections
museum is closed during summer months (time of distribution)
did not receive questionnaire
lost questionnaire

CONFIDENCE LIMITS OF THE SURVEY

As in all surveys, statistics (e.g. averages and proporations) computed on the respondent sample are used as estimates of the corresponding values for the entire population which the survey seeks to represent. Statistics on the respondent sample may differ from the true population values due to both systematic and random errors. Systematic errors would occur if particular types of museums were less likely to be included in or to respond to the survey AND these types of museums differed from the respondent museums in terms of the statistic in question.

Systematic Errors

Within each of the museum types and budget levels, the sample of museums to whom questionnaires were mailed was chosen so as to be entirely representative of the 1978 population. The only real potential for systematic errors is due to failures to respond among those museums sampled. The preceeding tables indicate that museums with smaller budgets were slightly less likely to be respondents to the current survey. This result is not surprising, since museums with smaller budgets were not as likely to be able to devote staff time to completing the survey as were museums with larger budgets. The difference in response rates was relatively small and not likely to be related to very serious biases in most statistics other than budget size itself.

The survey response rates differ more significantly by museum type. The response rate for science museums was so low as to leave room for more significant nonresponse biases. Systematic errors due to nonresponses were less likely to be a serious problem for other types of museums.

Very little can be said about museums that were not included in the 1978 survey and also not in the current survey. As described above, attempts were made to contact new museums and museums missed in the 1978 survey so as to improve the representativeness of the survey population.

Generalizations from the respondent sample should be made with caution because there is potential for systematic errors. The respondent sample does, however, include significant numbers of museums distributed across different types and sizes. In some cases, the number of respondents represents a significant percentage of the total population of museums. Assuming that systematic errors are not significant problems, a great deal can be said about the possible size of ramdom sampling errors.

Random Sampling Errors

The size of random sampling errors depends on (1) the number of respondent museums, (2) the proportion of the entire population included among the repondents, and (3) the variability of the statistics being estimated.

The first step in computing estimates for the size of random sampling errors was the estimation of the size of the population of 1984 museums overall and by type and budget size. This was accomplished by sorting each of the respondent museums into museum type and budget level categories according to the 1978 data. Each museum os then given a sampling weight equal to the total number of 1978 museums in a particular category divided by the number of 1984 respondents in that category. (See Chart 1) The resultant weight is the number of 1978 museums of a particular type and size represented by each 1984 respondent museum of that same type and size in 1978. The respondent museums are then sorted into budget and type categories based on the 1984 data and the weights in each category were added up to give an estimate of the total number of 1984 museums in that category. Chart 2 shows the estimated counts for the 1984 population of museums that resulted from this procedure. It should be kept in mind that the values in Chart 2 are only estimates. The actual numbers will differ somewhat. For purposes of estimating the approximate size of the confidence limits, the differences between the estimated and actual population sizes will not matter greatly.

Chart 1
Actual Population Distribution of Museum Type by Budget Size

	$35,000- $100,000	$100,001- $500,000	$500,001- $3,000,000	over 3 million	TOTAL
Art	140	206	58	18	422
Botanical Gds.	16	62	17	2	97
Children's	18	13	4	1	36
General	49	69	21	2	141
History	241	145	35	7	428
Historic Sites	189	111	29	2	331
Natural History	65	65	14	4	148
Planetariums	13	18	4	0	35
Science	53	194	19	6	272
Zoos/Aquariums	29	69	49	10	157
Other	7	5	1	0	13
TOTAL	820	957	251	52	2,080

Chart 2
Projected Population:
Estimated 1984 Population by Museum Type and Budget Size

	$35,000- $100,000	$100,001- $500,000	$500,001- $3,000,000	over 3 million	TOTAL
Art	50	192	164	39	445
Botanical Gdns.	3	59	33	3	98
Children's	12	14	6	2	34
General	15	39	45	7	106
History	111	228	100	14	453
Historic Sites	62	189	35	0	286
Natural History	23	84	31	6	144
Planetariums	0	18	9	0	27
Science	60	29	111	6	206
Zoos/Aquariums	0	63	69	15	148
Other	5	81	15	10	111
TOTAL	341	996	618	102	2,057

Chart 3 shows the standard errors of sample means due to random sampling. These values are in "standard deviation" units. The standard deviation is a measure of the variability of individual museums. If the standard deviation for a particular budget statistic were $1,000, for example, then roughly two-thirds of the museums would have responses that differed from the average by less than $1,000 and one-third of the museums would have differed from the average by more than $1,000. We generally want to know how accurate the mean value for the whole sample is, rather than just the value for a single museum. By multiplying the standard deviation computed from our sample by the value in Chart 3, we will have an estimate of the variation of the sample mean in absolute units rather than standard deviation units. Statisticians generally use confidence bounds of plus or minus two times the standard error to indicate the magnitude of possible errors. Only 5 times out of 100 would the sample statistic differ from the true population value by an amount greater than two standard deviations.

Many of the statistics of interest in the present survey are proportions (generally expressed as percentages). The maximum standard deviation for a proportion is one-half. Statistical confidence bounds may be estimated as two times the standard deviation times the standard error values in Chart 3. Since two times one-half is one, the values in Chart 3 also give the maximum confidence bounds for proportions without any further changes. Multiplying these values by 100 will give the equivalent confidence bounds for percentages.

Two examples will illustrate the appropirate use of Chart 3. Suppose we find that 45 percent of all of the museums in our sample display a certain characteristic. The entry in Chart 3 for ALL TYPES is .05. This means that we can be reasonably confident (95 percent) that between 40 and 50 percent of all museums in the target population will also display this characteristic. As a second example, suppose that 60 percent of all art museums with budgets between $100,000 and $500,000 have a certain characteristic. Using the value of .18 provided in Chart 3, we could be confident that the percentage of all art museums of this size that have the characteristic is between 42 and 78 percent. Chart 3 follows.

Chart 3
Standard Errors for Mean Estimates in Standard Deviation Units by Museum Type and Budget Level

	$35,000- $100,000	$100,001- $500,000	$500,001- $3,000,000	over 3 million	TOTAL
Art	.39	.18	.21	.30	.12
Botanical Gds.	.50	.24	.31	.50	.17
Children's	.52	.44	.45	1.00	.25
General	.53	.32	.24	.65	.17
History	.26	.19	.24	.37	.12
Historic Sites	.49	.25	.48	n/a	.20
Natural History	.69	.30	.29	.45	.19
Planetariums	n/a	.45	.66	n/a	.37
Science	.57	.41	.37	.63	.23
Zoos/Aquariums	n/a	.26	.24	.25	.15
Other	1.00	.28	.44	.41	.20
TOTAL	.16	.08	.09	.13	.05

Complete sampling and response rate statistics by type of museum and budget category can by found in Appendix B.

HIGHLIGHTS OF THE MUSEUM COLLECTIONS SURVEY

This survey of museums includes 364 institutions representing more than ten types of museums throughout the United States. Participating museums report budgets ranging from $35,000 to $53,000,000, and a collective number of estimated objects totalling 133,572,140. The following are presented as highlights from the survey data.

General Information

Of the participating museums (336) with annual operating budgets of $50,000 or more, 19.4 percent are art museums, 18.5 percent are history museums and 11.6 percent are zoological parks and aquariums. The remaining 50.5 percent represents eight other disciplines of museums.

Of the 28 participating museums with budgets under $50,000, 25 percent are historic sites, 21.4 percent are history museums and 14.2 percent are general museums. The remaining 39.4 percent represents seven other types of museums.

Physical Facilities

Museums report having from 1 to 84 buildings in which collections are housed. Approximately 35 percent report one building. An additional 39 percent report from 2 to 4 buildings. Five percent report having over 40 buildings.

History museums, zoological parks and historic sites report the largest numbers of buildings, averaging 10.7 percent, 16.6 percent and 5.9 percent, respectively.

Natural history museums, art museums and science museums report the largest amount of indoor space, averaging 97,100, 82,900, and 76,000 square feet, respectively.

Botanical gardens, natural history museums and historic sites report the greatest amount of outdoor space, averaging 201.8, 110.5, and 86.8 acres, respectively.

Regarding collections protection systems, 70 percent of museums report fire alarms, 71 percent report burglar alarms, and 60 percent report climate control systems.

The majority of museums report having expanded (59 percent) or renovated (60 percent) their facilities. Of these, 69 percent of the reported expansions and 83 percent of the reported renovations have occurred within the last five years.

Museums reported the state of repair of their buildings or functional areas within their facilities. Overall, historic structures, followed by collection storage areas, were ranked by museums as being their types of facilities in greatest need of repair.

Over half of museums report having full-time staff in-house as curators (79.1 percent), building/maintenance personnel (68.8 percent) and registrars (64 percent). Slightly more than one quarter of museums report having full-time conservators (26.4 percent). Fifteen percent have conservation scientists on staff.

Museums report that their largest concentrations of part-time employees are building maintenance personnel (39.6 percent of museums have part-time building/maintenance personnel) and security (35.1 percent of museums have part-time security personnel).

Twenty-four percent of museums report having volunteer registrars and 22.5 percent report having volunteer curators. When all types of collections care personnel are considered, security personnel, conservation scientists and conservators appear least frequently in volunteer positions in museums, 3.9 percent, 5.1 percent and 6.6 percent, respectively.

Among the 333 museums that provided detailed information on staff positions, 124 or 46 percent report current vacancies for full-time employees. Fifty-one or 15 percent report vacancies for part-time employees and 16 or 0.7 percent report vacancies for volunteer staff.

Of the 124 museums reporting vacancies for full-time employees, 36 (29 percent) of these are for curators, 29 (23 percent) are for building/maintenance personnel, and 17 (14 percent) are for registrars.

Fifteen percent of museums report having conservation scientists on a full-time basis; 5.4 percent report having conservation scientists on a part-time basis. Vacant positions were reported least frequently for conservation scientists than for any other type of collections care staff -- 1.2 percent report full-time vacancies and 0.6 percent report part-time vacancies.

Financial Information

Museums reported operating budgets ranging from $35,000 to $53,000,000. Sixty percent reported budgets of $500,000 or less. Twenty-nine percent have budgets from $500,000 to $3,000,000. Eleven percent have budgets greater than $3,000,000.

When asked to take inflation into account, 44 percent of museums report an increase in their funding for conservation over the last five years. An additional 36 percent report a stabilization and 19 percent report a decline in funding for conservation during this same period.

Forty-nine percent of the participating museums report receiving funds designated specifically for conservation during the last five years (1980-1984). This percentage was highest in the case of art museums (63 percent) and history museums (57 percent), and lowest for planetariums (20 percent) and children's museums (27 percent).

Thirty percent of the participating museums report receiving funds designated specifically for collections management during the last five years (1980-1984). These percentages were highest in the case of natural history museums (43 percent) and general museums (41 percent), and lowest for children's museums (18 percent) and science museums (18 percent).

Conservation of the Collections

Seventy-two percent of museums report that they have no written long-range policy or plan for conservation. The largest percentages of institutions with plans are institutions that primarily house living collections. Sixty-eight percent of botanical gardens and 51 percent of zoos report having plans, as compared with 22 percent of art museums, 21 percent of history museums and 21 percent of science museums.

Thirty percent of museums report having surveyed none of their collections for conservation purposes. Thirty-six percent have surveyed from one to fifty percent of their holdings: 34 percent have surveyed from 51 to 100 percent of their holdings. Types of museums that survey the greatest percentages of their collections are historic sites (with 49 percent reporting that they survey over 50 percent of their holdings) and art museums (with 44 percent reporting that they survey over 50 percent of their collections).

Overall, museums report that 5 percent of the collections are in serious need of treatment. Serious need was defined in the survey as the danger of partial or complete loss unless the object was treated soon.

Overall, museums report that the condition of 40 percent of the collections is unknown.

Eighty-four percent of museums do not treat objects other than those belonging to the institution.

Forty-eight percent of museums report having offered public programming on collections care (conservation and/or collections management) in the last 5 years. The highest percentages were reported by zoos (80 percent), botanical gardens (61 percent) and history museums (50 percent). The lowest percentages were reported by children's museums (8 percent), planetariums (14 percent) and science museums (21 percent).

Museums most frequently ranked as "severe problem" or "problem" in the care of collections: proper storage (87 percent), funds for conservation (83 percent), conservation laboratory (71 percent), and proper storage equipment (70 percent).

Collections Management

Overall, museums report that they exhibit 44 percent of their collections on a regular basis. Zoos report exhibiting the largest percentages of their collections (86 percent). Natural history museums and general museums exhibit the smallest percentages of their collections, 14 and 25 percent respectively. Art museums exhibit 28 percent of their collections. Overall, 56 percent of museums' collections are maintained in areas other than exhibition areas.

Participating museums have inventoried 77 percent, have catalogued 68 percent, and have photographed 30 percent of their collections. Fifty-three percent of the inventories are reported to be up-to-date. Twenty-three percent of the catalogues are reported to be up-to-date.

Collections in museums have grown by 19 percent during the last five years. The percentage of growth has been highest in science museums (42 percent) and lowest in historic sites (5 percent).

Zoos, botanical gardens and natural history museums make use more frequently than other museums of computer technology for collections records. For inventory records, 44 percent of zoos, 40 percent of botanical gardens, and 29 percent of natural history museums use computers exclusively or along with manual files. Regarding catalogue records, 40 percent of natural history museums, 32 percent of botanical gardens, and 23 percent of zoos use computers exclusively or along with manual files.

Seventy-five percent of museums have written policies regarding accessions and lending/borrowing; 32 percent report including conservation professionals in policy decisions regarding accessions. Sixty-nine percent have written policies on deaccessions.

Seventy-eight percent of museums report that conservation considerations are included in their loan policies, whether written or not.

When asked to acknowledge collections care and management activities that are undertaken to satisfaction, 71 percent of museums report the "registration of collections" and 64 percent report the "cataloguing of collections." Twenty percent expressed satisfaction with their "computerization of inventory and catalogue data".

Nineteen percent are satisfied with their efforts to "obtain a conservator/veterinarian/horticulturist on staff". Fifteen percent are satisfied with their efforts to "upgrade laboratory equipment."

Museum Activities

Museums were asked to identify and rank their priorities regarding collections care for the next decade. Collectively, the priorities reported are:

#1: conservation of the collections
#2: computerization of inventories and catologues
#3: developing adequate storage space
#4: upgrading temperature and humidity controls
#5: education of museum personnel
#6: examination of collections conditions

THE COMPLETE SURVEY RESULTS

I GENERAL INFORMATION

This section of the survey requested identifying information such as name of museum, address of museum, and telephone number. The name and title of the person or persons responding for the museum was requested also. To protect the rights of privacy of respondents to the survey, only a portion of identifying information is presented here. The analysis of this section includes only type of museum.

364 museums responded to this question; 336 with budgets of $50,000 or more, and 28 with budgets under $50,000. The 28 museums with budgets under $50,000 were analyzed apart from museums with budgets of $50,000 or more. Responses provided by these 28 museums to the portion of the survey dealing with their collections are presented in a supplemental section (see page 71).

Type of Museum	Number of Respondents with budgets of $50,000+	% of Respondents with budgets of $50,000+
Art	65	19.4%
Botanical garden/arboretum	28	8.3%
Children's	12	3.6%
General	27	8.0%
History	62	18.5%
Historic Site	27	8.0%
Natural History	28	8.3%
Planetarium	7	2.1%
Science	19	5.7%
Zoo/Aquarium	39	11.6%
Other	22	6.5%
	336	100.0%

A budget analysis of these 336 museums is presented in Appendix A, Table 1. The following regional analysis was possible for 332 of these museums.

Region	No. of Respondents with Budgets of $50,000+	% of Respondents with Budgets of $50,000+
New England (CT, ME, MA, NH, RI, VT)	31	9.3%
Northeast (DE, DC, MD, NJ, NY, PA)	78	23.5%
Midwest (IL, IN, IA, MI, MN, MO, OH, WI)	66	19.9%
Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV)	58	17.5%
Mountain-Plains (CO, KS, MT, NE, NM, ND, OK, SD, TX, WY)	41	12.3%
West (AK, AZ, CA, HI, ID, NV, OR, UT, WA)	58	17.5%
	332	100.00%

II PHYSICAL FACILITIES

A. How many separate buildings do you have on and off-site, including storage facilities, in which any part of your collection(s) is housed?

Number of Buildings

# Buildings	# of Museums	% of Respondents
1	123	34.9
2	64	18.2
3	47	13.4
4	27	7.7
5	12	3.4
6	10	2.8
7	9	2.6
8	8	2.3
9	5	1.4
10-16	18	5.1
17-44	18	5.1
45+	11	3.1
	352	100%

Number of Reported Buildings by Museum Type and Budget Size

"N" indicates the number of museums responding within each category.
"Mean" indicates the mean response of number of buildings.
This analysis is based on 314 museums responding.

Budget	$50-100K		100-500K		500K-3M		$3M+		Grand
	N	Mean	N	Mean	N	Mean	N	Mean	Mean
Art	6	1.0	26	1.2	22	2.3	11	2.5	1.8
Botanical	4	1.3	13	3.0	9	10.3	2	2.5	5.1
Children	4	1.3	5	1.4	2	1.4	2	1.0	1.3
General	3	2.3	9	1.7	13	3.0	2	8.5	2.9
History	14	2.8	27	4.6	16	17.3	5	43.8	10.7
Hist. Site	5	3.6	17	4.9	5	11.8			5.9
Nat. Hist.	3	1.7	12	2.3	9	3.0	4	3.0	2.5
Planetariums	1	1.0	4	1.5	2	1.5			1.4
Science	3	2.0	5	3.2	8	5.1	3	1.3	3.6
Zoo/Aqua			14	9.4	17	16.5	8	29.5	16.6
Totals	43		132		103		36		

According to this chart, observations can be made regarding the number of buildings and type of museum. The overall mean responses (grand mean column) indicate that history museums, zoological parks, and historic sites report the greatest number of buildings. (History museums in the highest budget category included a state museum that reported 31 sites, and two museums that reported 67 and 51 buildings each). Children's museums and planetariums report the least number of buildings, with grand means of 1.3 and 1.4, respectively.

B. What is the total square footage of the indoor space?

Amount of Indoor Space by Museum Type and Budget Size

"N" indicates the number of museums responding within each category. "Mean" indicates the mean response of indoor space in thousands of square feet.

This analysis is based on 314 museums responding.

Budget	$50-100K		100-500K		500K-3M		$3M+		Grand Mean
	N	Mean	N	Mean	N	Mean	N	Mean	
Art	6	7.9	26	13.3	22	57.7	11	338.8	82.9
Botanical	4	3.1	13	7.9	9	60.0	2	29.0	24.2
Children	4	6.0	5	20.7	2	57.6	1	242.0	40.4
General	3	21.3	9	30.1	13	84.3	2	183.0	66.7
History	14	13.6	27	23.4	16	70.1	5	334.6	58.4
Hist. Site	5	18.2	17	12.3	5	35.2			17.6
Nat. Hist.	3	17.3	12	22.2	9	88.7	4	400.4	97.1
Planetariums	1	2.0	4	11.0	2	18.4			11.8
Science	3	16.0	5	27.6	8	67.0	3	240.7	76.0
Zoo/Aqua			14	8.9	17	30.8	8	227.8	63.3
	43		132		103		36		

The mean responses to the square footage of indoor space indicate that the amount of indoor space is generally related to the size of the institutions' budgets. The "grand mean" column indicates that natural history museums, art museums and science museums report the largest amount of indoor square footage. The results of Question A demonstrate that other types of museums (history museums, zoos, historic sites) report the largest numbers of buildings. Consequently, the amount of indoor space is not necessarily related to the number of buildings reported by the participating musems.

What is the total acreage of the outdoor space?

Acres of Outdoor Space by Museum Type and Budget Size

"N" indicates the number of museums responding in each category. "Mean" indicates the mean response of outdoor acreage. This analysis is based on 314 museums.

Budget	$50-100K		100-500K		500K-3M		$3M+		Grand
	N	Mean	N	Mean	N	Mean	N	Mean	Mean
Art	6	.2	26	6.4	22	10.2	11	12.3	7.7
Botanical	4	25.8	13	104.3	9	349.0	2	525.0	201.8
Children	4	0.0	5	6.6	2	.4	1	6.5	3.4
General	3	2.0	9	7.1	13	30.1	2	493.0	53.6
History	14	2.5	27	14.5	16	92.5	5	56.2	35.3
Hist. Site	5	69.5	17	52.7	5	220.0			86.8
Nat. Hist.	3	167.4	12	211.6	9	4.9	4	2.1	110.5
Planetariums	1	0.0	4	2.8	2	21.7			7.7
Science	3	8.7	5	15.3	8	38.3	3	14.3	23.8
Zoo/Aqua			14	15.2	17	45.8	8	154.2	57.1
	43		132		103		36		

The "grand mean" colums indicates that botanical gardens, followed by natural history museums and historic sites, report the greatest amount of outdoor space. The large means calculated for natural history museums are attributable to archeological sites reported by these institutions.

C. In this question, indicate the function(s) that occurs in each building and the general state of repair of the area where the function is carried out. Then indicate whether or not the building has fire, burglar and climate control systems. If your institution has more than two buildings with different functions, photocopy the next page and attach the additional sheet(s) to the questionnaire.

For those museums such as ZOOS and HISTORICAL SITES with multiple buildings that serve the same functions, do not answer question C separately for each structure. Cite total number of buildings with same function and then indicate by number the buildings that meet the description, i.e., total number of buildings: 5; collections storage: excellent: 3; good: 2; fire alarm: 3; climate control: 2; burglar alarm: 0.

ZOOS should answer for all structures including exhibition and discrete animal buildings.

BOTANICAL GARDENS should include greenhouses, conservatories, lath houses, cold frames, outdoor nursery areas, herbaria and other structures.

Respondents had difficulty providing answers to this question. The data collected demonstrates that it is not possible to assess accurately the number of buildings that are reflected in these answers. However, the mean responses regarding the state of repair of buildings or functional areas, as well as the percentages of museums that report fire alarms, climate control and burglar alarm systems, were computed successfully.

The following key should be used to interpret the next table (state of repair of buildings/functional areas):

4 = Excellent, defined as needing no repairs
3 = Good, defined as needing routine repair
2 = Poor, defined as needing more than routine repair but not needing major repair
1 = Needs major repair, defined as being in a condition that is threatening to the welfare of the objects.

State of Repair of Buildings/Functional Areas

Building/Functional Area	Mean Response State of Repair	Rank* Need of Repair
Collection Storage	2.84	2
Conservation Laboratory	3.16	6
Exhibition Space	3.10	5
Field Research Station/ Animal Propagation Area	3.67	8
Historic Structures	2.81	1
Preparation Areas	2.91	3
Registration, Recordkeeping	3.21	7
Service Areas	2.93	4

* Based on responses to this question, the state of repair of buildings or functional areas was ranked according to condition regarding need of repair. Historic structures, with a ranking of 1, are reported to be in greatest need of repair. Field research stations, with a ranking of 8, are reported to be in least need of repair. The respondents reported the conditions of buildings using the key provided in the questionnaire (key is defined above).

The mean responses to the state of repair of facilities or functional areas are analyzed by type of museum and budget level in Appendix A, Table 2.

Percentage of Museums Reporting Fire Alarms, Climate Control and Burglar Alarm Systems

	Fire	Climate	Burglar
All museums	70	60	71
50-100K	65	43	72
100-500K	67	58	70
500K-3M	71	66	70
3M+	86	73	80

These data indicate that fire alarms and burglar alarm systems are more prevalent than climate control systems. The presence of these collection protection systems is related to budget level, with greater percentages of museums with larger budgets reporting having the systems.

D. 1. Has your facility been expanded? If yes, when? (year). For botanical gardens and zoos have you added a new garden area or animal enclosure?

	Number of Respondents	Percentage of Responses
Yes	181	59.1%
No	125	40.9
	306	100%

Year Expansion Took Place by Museum Type

	74	75	76	77	78	79	80	81	82	83	84	Number of Responses
Art	3	2	2	3	2				3	3	6	24
Botanical			1	2		1	2	2			4	12
Children	1	1		1			2			2	3	10
General	1			1		2		2	1	3	3	13
History	1		1	1	1		5	2	4	7	12	34
History Site		2	2	1		1	1		1	2	1	11
Nat. History	1	1		1	2						2	7
Planetariums												
Science					2			3		1	3	9
Zoo/Aqua		1			3			4	2	4	9	23
Number of Responses	7	7	6	10	10	4	10	13	11	22	43	143
Percentage of Responses	5%	5%	4%	7%	7%	3%	7%	9%	8%	15%	30%	

Eighty one or 57 percent of the 143 expansions reported in the chart above have taken place in history museums, zoos, or art museums. Sixty-nine percent of these expansions have occurred within the last 5 years (1980-1984).

An analysis of expansion by year, museum type, and budget size is presented in Table 3 in Appendix A.

2. Has your institution undertaken major renovations that affect the conservation and environments of the collections?

No. of Responses		Percentage of Responses
Yes	180	60.2%
No	119	39.8%
	229	100%

Year Renovation Took Place by Museum Type

	74	75	76	77	78	79	80	81	82	83	84	Number of Responses
Art	2	2		4					5	6	12	31
Botanical			1			1	1		2	6	6	17
Children's				1			1	1	1	1	1	6
General			1			2		3	1	5	6	18
History	1	1	1	1		1	3	2	3	7	13	33
Hist. Site		3		1		1		1	1	2	6	15
Nat. History		1					2	1		1	3	8
Planetariums											2	2
Science				1	1			4			3	9
Zoo/Aqua						1	1	1	4	4	17	28
Number of Responses	3	7	3	8	1	6	8	13	17	32	69	167
Percentage of Responses	2%	4%	2%	5%	1%	3%	5%	8%	10%	19%	41%	

Ninety-two, or 55 percent, of the 167 renovations reported in the chart above have taken place in history museums, zoos, or art museums. Eighty-three percent of these renovations have occurred within the last five years (1980-1984).

An analysis of renovation by year, museum type, and budget level is presented in Table 4 in Appendix A.

E. Total size of overall staff (full- and part-time) ________.

Overall Staff Size by Museum Type and Budget Level

"Mean" indicates the mean response of overall staff size provided in each category.

Budget	$50-100K Mean	100-500K Mean	500K-3M Mean	$3M+ Mean
Art	4	11	43	208
Botanical	6	15	44	135
Children	7	11	95	150
General	8	16	49	315
History	7	17	84	398
Hist. Site	5	26	57	---
Nat. Hist.	3	12	52	192
Planetarium	4	18	38	---
Science	4	15	47	311
Zoo/Aqua	---	14	74	389

The mean responses to specific staff positions were analyzed by type of museum and by budget level. See tables 5 through 11, Appendix A.

Museums were asked to fill in the following chart, indicating staff positions that are filled or that are vacant by area of responsibility (type of employee) and by full-time, part-time, volunteer, etc. This analysis was possible for 333 of the 336 participating museums with budgets of $50,000 or more.

Staff Analysis (Percentages of Museums Responding)

FT = Full Time, PT = Part Time, VOL = Volunteer

Area of Responsibility	Filled Positions				Vacant Positions*		
	FT	PT	VOL	OTHER	FT	PT	VOL
Curator	79.1	22.5	22.5	15.6	10.8(36)	2.7(9)	1.5(5)
Registrar	64.0	22.5	24.0	9.0	5.1(17)	2.7(9)	1.2(4)
Conservator	26.4	6.6	6.6	11.7	3.6(12)	1.2(4)	.6(2)
Cons. Scientist	15.0	5.4	5.1	4.2	1.2(4)	.6(2)	.3(1)
Cons. Technician	35.4	15.3	11.7	3.9	4.2(14)	1.5(5)	.9(3)
Security	38.4	35.1	3.9	1.5	3.6(12)	2.4(8)	.3(1)
Building Maintenance	68.8	39.6			8.7(29)	4.2(14)	

* The numbers provided in parentheses under "vacant positions" are actual numbers of positions reported. For example, 10.8% of museums report vacancies for full-time curators. This represents vacant positions in 36 museums.

Staff analyses, according to percentages of museums by type of institution, appear in tables 12 through 22, Appendix A.

III. FINANCIAL INFORMATION

A. Size of operating budget in fiscal year ending prior to January 1984 (include rent, personnel, security and maintenance). Exclude one-time capital expenditures. Universities and other museums that are part of larger organizations should include only that part of the budget specifically for the museum.

Mean Response	$1,581,280
Range of Responses	$52,617 - $53,000,000

Information on the 28 museums that reported budgets under $50,000 is presented in the Supplemental Information Section, p. 69.

Overall Response by Budget Levels

	Number of Respondents	% of Respondents
$35-100K	73	20
$100-500K	144	40
$500K-3M	107	29
$3M+	40	11
Total	364	100%

Number of Respondents by Museum Type and Budget Level*

Budget	$50-100K	$100-500K***	$500K-3M	$3M+	Total
Art	6	26	22	11	65
Botanical	4	13	9	2	28
Children	4	5	2	1	12
General	3	9	13	2	27
History	14	27	16	5	62
Hist. Site	5	17	5	0	27
Nat. Hist.	3	12	9	4	28
Planetariums	1	4	2	0	7
Science	3	5	8	3	19
Zoo/Aqua	0	14	17	8	39
Other	2	12	4	4	22
Total	45	144	107	40	336

* This information is presented in greater detail in Appendix A, Table 1.

*** This category begins with budgets of $101,001; the next category begins with budgets of $500,001; etc.

The following charts reflect percentages of respondents by museum type within each budget level, and by budget level within each museum type. The results demonstrate that within this sample of museums, art museums and zoos represent the largest concentrations (47.5%) of institutions with budgets over $3,000,000. Historic sites and history museums represent the largest concentrations (46.4%) of institutions with budgets under $50,000. No historic sites reported budgets in the largest budget category (over $3,000,000).

Percentages of Respondents by Museum Type Within Each Budget Level

	Under-50K	$50-100K	$100-500K*	$500-3M	$3M+
Art	3.6%	13.3%	18.0%	20.5%	27.5%
Botanical	3.6%	8.9%	9.0%	8.4%	5.0%
Children's	0	8.9%	3.5%	1.9%	2.5%
General	14.2%	6.7%	6.3%	12.1%	5.0%
History	21.4%	31.1%	18.8%	15.0%	12.5%
History Site	25.0%	11.1%	11.8%	4.7%	0
Nat. History	10.7%	6.7%	8.3%	8.4%	10.0%
Planetariums	3.6%	2.2%	2.8%	1.9%	0
Science	3.6%	6.7%	3.5%	7.5%	7.5%
Zoos/Aqua	10.7%	0	9.7%	15.9%	20.0%
Other	3.6%	4.4%	8.3%	3.7%	10.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

* This category begins with budgets of $101,001; the next category begins with budgets of $500,001; etc.

Percentages of Respondents by Budget Level Within Each Museum Type

	Under-50K	$50-100K	$100-500K*	$500-3M	$3M+	Total
Art	1.5%	9.1%	39.4%	33.3%	16.7%	100%
Botanical	3.5%	13.8%	44.8%	31.0%	6.9%	100%
Children's	0	33.3%	41.7%	16.7%	8.3%	100%
General	12.9%	9.7%	29.0%	41.9%	6.5%	100%
History	8.8%	20.6%	39.7%	23.5%	7.4%	100%
History Site	20.6%	14.7%	50.0%	14.7%	0	100%
Nat. History	9.7%	9.7%	38.7%	29.0%	12.9%	100%
Planetariums	12.5%	12.5%	50.0%	25.0%	0	100%
Science	5.0%	15.0%	25.0%	40.0%	15.0%	100%
Zoos/Aqua	7.2%	0	33.3%	40.5%	19.0%	100%
Other	4.3%	8.7%	52.2%	17.4%	17.4%	100%

* This category begins with budgets of $100,001; the next category begins with budgets of $500,001; etc.

An Analysis of Budgets of $50,000 or more by Region was possible for 332 Museums.

Budget by Region

Region	Range of Responses	Mean Response	Median Response
New England (CT, ME, MA, NH, RI, VT)	$52,617 - $6,326,000	$926,363	$310,000
Northeast (DE, DC, MD, NJ, NY, PA)	$56,000 - $53,000,000	$2,407,222	$470,068
Midwest (IL, IN, IA, MI, MN, NO, OH, WI)	$54,400 - $17,122,164	$2,132,730	$413,050
Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV)	$60,000 - $4,213,986	$641,869	$300,019
Mountain-Plains (CO, KS, MT, NE, NM, ND, OK, SD, TX, WY)	$53,000 - $6,275,608	$710,816	$399,949
West (AK, AZ, CA, HI, ID, NV, OR, UT, WA)	$58,640 - $28,000,000	$1,747,812	$390,014

Budget Levels by Regions (In Percentages)

(See previous chart for states included in each region)

Region	$50K-$100K	$100K-$500K	$500K-$3M	$3M+	TOTAL
New England	13%	35%	42%	10%	100%
Northeast	10%	40%	32%	18%	100%
Midwest	14%	39%	24%	22%	100%
Southeast	9%	51%	38%	2%	100%
Mountain-Plains	21%	42%	35%	2%	100%
West	17%	38%	34%	11%	100%

B. For the current fiscal year, what amount of the operating budget for equipment and supplies and for personnel is allocated to the following specific areas (including staff salaries or consulting services). If salaries are not a line-item in budget, provide approximate amount of the salary of the individual responsible for function in this category. Exclude exceptional one-time capital expenditures for equipment and supplies. Enter "N/A" if not applicable. Botanical gardens include the cost of maintaining rare plant collections under "conservation" and costs for research on the collections under "curatorial".

Allocation of Equipment/Supply Budget (Average Percentages)

Expenditure	1	2	3	4	5	6	7
All Museums	31	36	2	8	12	8	4
Art	30	31		5	15	13	6
Botanical	38	35	2	11	5	3	7
Children	27	33		2	17	15	6
General	22	52	5	5	7	3	5
History	29	39	3	8	13	4	4
Hist. Site	47	39		3	6	4	1
Nat. Hist.	27	28	2	8	15	16	3
Planetaria	4	37	6	6	20	20	6
Science	40	33	2	8	5	11	
Zoo/Aqua	33	30	1	15	15	4	1

Expenditures: 1 = buildings and grounds; 2 = heating and cooling; 3 = computerization of collection; 4 = conservation, analytical/scientific research, breeding, vet programs; 5 = curatorial; 6 = preparation; 7 = registration/record keeping.

An analysis of the equipment budget by expenditure, type of museum, and budget size is presented in Table 23 in Appendix A.

Allocation of Personnel Budget (Average Percentages)

Expenditure	1	2	3	4	5	6	7
All Museums	35	3	1	7	33	9	11
Art	25	5	-	4	36	13	16
Botanical	61	2	1	18	13	3	2
Childrens	27	4	2	2	41	13	11
General	36	2	1	10	31	8	13
History	33	1	2	5	37	9	15
Hist. Site	57	2	-	2	20	7	12
Nat. Hist.	28	1	2	6	45	1	7
Planetariums	25	6	8	8	33	17	2
Science	35	4	3	14	21	15	8
Zoo/Aqua	31	2	1	21	36	3	5

Expenditures: 1 = buildings and grounds; 2 = heating and cooling; 3 = computerization of collection; 4 = conservation, analytical/scientific research, breeding, vet programs; 5 = curatorial; 6 = preparation; 7 = registration/record keeping.

An analysis of the personnel budget by expenditure, type of museum, and budget sizeis presented in Table 24, Appendix A.

C. Taking into account inflation over the past five years, have funds for conservation at your institution (circle one): 1. increased; 2. decreased; 3. stayed the same?

increased	44%
decreased	19%
stabilized	36%

Have Conservation Funds Increased, Decreased, Remained the Same? by Museum Type (Percentages)

	Increased	Decreased	Same	Number of Museums
Art	41	16	43	57
Botanical	29	32	39	31
Children	11	11	88	9
General	44	15	41	25
History	53	14	33	58
Hist. Site	56	26	19	27
Nat. Hist.	29	33	38	25
Planetariums	20	60	20	5
Science	50	19	31	16
Zoo/Aqua	57	11	32	37
All museums	44%	19%	36%	290

An analysis of this question by museum type and budget size is presented in Table 25 in Appendix A.

D. 1. In the last five years, have you obtained funding specifically designated for conservation of collections? (Zoos include breeding and field programs.)

	No. of Responses	% of Responses
Yes	148	49%
No	155	51%
	303	100%

Percentage of Museums Receiving Funds Specifically Designated for Conservation by Museum Type

	Yes (%)	No (%)	Number of Responses
Art	63	37	61
Botanical	32	68	28
Children	27	73	11
General	52	48	27
History	57	43	60
Hist. Site	46	54	27
Nat. Hist.	39	61	28
Planetaria	20	80	5
Science	44	56	17
Zoo/Aqua	44	56	39
All museums	49%	51%	303

An analysis of the percentage of museums receiving funds for conservation by museum type and budget size is presented in Table 26, in Appendix A.

2. In the last five years, have you obtained funding specifically designated for collections (records) management?

	No. of Responses	% of Responses
Yes	91	30%
No	212	70%
	303	100%

Percentage of Museums Receiving Funds Specifically Designated for Collections (Records) Management by Museum Type

	Yes	No	Number of Response
Art	23	77	61
Botanical	25	75	28
Children	18	82	11
General	41	59	27
History	38	62	60
Hist. Site	30	70	27
Nat. Hist.	43	57	28
Planetaria	20	80	5
Science	18	82	17
Zoo/Aqua	26	74	39
All museums	30%	70%	303

An analysis of the percentage of museums receiving funds for collections management by museum type and budget size is presented in Table 27, in Appendix A.

E. If you have answered "Yes" to either of the above, indicate the source, amount, and purpose of the funding (C indicates funds for conservation; CM indicates funds for collections (records) management):

Totals Reported From All Sources for Conservation ($60,800,000)

Amount refers to the amount of money reported; "N" refers to the number of museums responding. M = millions, K = thousands.

	1979		1980		1981		1982		1983	
	Amt.	N	Amt.	N	Amt.	N	Amt.	N	Amt.	N
Federal	1.8M	18	2.0M	18	1.0M	25	1.7M	25	3.9M	28
Private Foundations	227.0K	12	549.0K	18	673.0K	19	1.1M	26	469.0K	20
Corporations	108.0K	4	107.0K	4	266.0K	1				
Individuals	774.0K	19	1.4M	16	1.7M	23	3.0M	25	2.0M	28
States	2.0M	11	2.3M	13	5.0M	15	3.9M	19	3.7M	18
Local Public Funds	999.0K	5	1.9M	6	2.1M	6	2.6M	8	2.8M	8
Other	2.2M	10	2.2M	9	1.9M	7	2.2M	8	2.4M	9
Totals	8.1M	79	10.4M	84	12.6M	96	14.5M	111	15.2M	111

Total Reported From All Sources for Collections Management ($34,100,000)

Amount refers to the amount of money reported; "N" refers to the number of museums responding. M = millions, K = thousands.

	1979		1980		1981		1982		1983	
	Amt.	N	Amt.	N	Amt.	N	Amt.	N	Amt.	N
Federal	1.6M	8	2.2M	9	2.7M	15	2.2M	16	1.3M	11
Private Foundations	687.0K	6	63.0K	5	69.0K	7	172.0K	7	328.0K	10
Corporations	85.0K	2	36.0K	3	30.0K	2	40.0K	3	171.0K	7
Individuals	1.2M	5	115.0K	5	800.0K	2	114.0K	2	110.0K	5
States	983.0K	4	609.0K	4	860.0K	5	1.1M	8	2.6M	10
Local Public Funds	621.0K	2	754.0K	2	834.0K	2	1.0M	3	865.0K	3
Other	1.9M	6	2.3M	6	1.8M	7	1.9M	7	2.3M	7
	7.0M	33	6.0M	34	7.0M	40	6.5M	46	7.6M	53

Funds for conservation and for collections management are analyzed by museum type in tables 28 through 41, Appendix A.

IV CONSERVATION OF COLLECTIONS

A. Does the museum have a written long-range plan for conservation of collections?

	No. of Responses	% of Responses
Yes	88	28%
No	226	72%
	314	100%

Percentage of Museums by Type with Written Long Range Plans for Conservation of Their Collections

Art	22
Botanical	68
Children	25
General	30
History	21
Hist. Site	33
Nat. Hist.	29
Planetaria	14
Science	21
Zoo/Aqua	51
All	28

This analysis is based on 314 respondents.

B. Circle the percentage of your collection(s) that has been surveyed for conservation purposes? (Zoos should answer for surveys by veterinarians, not zookeepers.) 1. none. 2. 1-25%. 3. 26-50%. 4. 51-75%. 5. 76-100%.

		No. of Responses	% of Responses
1.	None	94	30
2.	1-25%	82	26
3.	26-50%	31	10
4.	51-75%	38	12
5.	76-100%	69	22
		314	100%

Percentages of Museums by Type Reporting the Percentage of Collections That Have Been Surveyed for Conservation Purposes

	None	1-25%	26-50%	51-75%	76-100%	51%+	Rank*
Art	15	23	18	15	29	44	2
Botanical	36	11	11	21	21	42	3
Children	46	12	0	25	17	42	4
General	22	41	7	7	19	26	7
History	23	32	13	10	16	26	8
Hist. Site	19	15	7	19	30	49	1
Nat. Hist.	36	18	11	14	21	35	5
Planetariums	43	14	14	0	14	14	
Science	42	21	0	11	11	22	9
Zoo/Aqua	28	21	5	3	28	31	6
Total	26	23	10	12	22	34	

This analysis is based on 314 respondents.

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* Based on the overall response to this question, museum types can be "ranked" in regard to the percentage of their collections that have been surveyed. Because planetariums do not have collections of the same nature as other types of museums, and surveys are not crucial to the well-being of their collections, they have not been ranked.

C. What is the approximate number of each type of object in your collection?

Number and Percentage of Objects by Object Type

These numbers reflect objects reported by museums with budgets of $50,000 or more. An additional 330,000 objects were reported by 28 museums with budgets below $50,000.

	Number of Objects	Number of Museums Responding	Percentage of Objects Reported
Total	133,242,140	323	
Aero	10,002	32	*
Live Animal	549,145	74	*
Preserved Animal	39,043,227	105	29.3%
Anthropology	2,694,763	126	2.0%
Archeology	25,753,329	134	19.3%
Books	3,956,110	171	3.0%
Ceramics, Glass	335,979	162	*
Documents	14,507,614	159	10.9%
Film	52,244	83	*
Furniture	77,366	162	*
Geology	8,821,587	103	6.6%
Historic House	3,926	103	*
Historic Sites	148	43	*
Horological	52,445	81	*
Landscape	1,261	58	*
Machinery	79,482	84	*
Maritime Vessels	4,901	28	*
Medical	122,312	86	*
Medals	79,877	101	*
Military	328,565	119	*
Money	989,559	93	*
Musical	13,096	117	*
Paintings	92,798	207	*
Philatelical	15,044,096	41	11.3%
Negatives	3,907,523	132	2.9%
Photoprints	4,555,435	195	3.4%
Physical Science	56,160	47	*
Live Plants	2,120,177	49	1.6%
Preserved Plants	5,899,356	61	4.4%
Indoor Sculpture	29,163	139	*
Outdoor Sculpture	1,302	101	*
Textile	550,849	168	*
Tools	205,758	120	*
Toy & Doll	110,735	119	*
Transportation	21,683	88	*
Works of Art on Paper	2,589,842	176	1.9%
Other	580,325	62	*

* = less than 1 percent

Number of Objects Reported by Budget Level

The following numbers are numbers of objects reported in each category. The numbe
in parentheses are numbers of museums responding.

Object	$50,000-$100,000	$101,000-$500,000	$501,000-$3,000,000	$3,000,00
Aero	394 (3)	175 (8)	5,320 (13)	4,113 (
Live Animals	131 (3)	5,370 (25)	69,205 (32)	474,439 (
Pres. Animals	21,325 (11)	2,848,532 (38)	8,174,474 (43)	27,998,896 (
Anthropology	56,608 (15)	157,812 (48)	1,443,567 (49)	1,036,776 (1
Archeology	114,766 (16)	1,550,599 (57)	21,638,694 (44)	2,449,270 (
Books	215,216 (14)	429,362 (70)	442,837 (58)	2,868,695 (
Ceramics, Glass	7,629 (17)	46,897 (70)	77,589 (51)	203,864 (2
Documents	26,559 (15)	4,771,781 (61)	2,535,955 (55)	7,173,319 (2
Film	526 (7)	3,464 (31)	18,373 (30)	29,881 (
Furniture	2,623 (21)	21,666 (63)	28,100 (51)	24,977 (
Geology	42,284 (11)	262,881 (37)	2,109,351 (39)	6,407,071 (1
Hist. House	35 (12)	229 (46)	336 (31)	3,326 (
Hist. Sites	13 (7)	50 (19)	48 (15)	37
Horological	178 (9)	1,751 (26)	2,551 (29)	47,965 (1
Landscape	27 (4)	685 (27)	254 (16)	295 (
Machinery	1,021 (10)	4,266 (30)	2,966 (32)	71,229 (
Maritime Vessels	4 (2)	112 (8)	740 (9)	4,045
Medical	3,288 (13)	20,270 (28)	22,651 (30)	76,103 (1
Medals	1,712 (13)	13,018 (32)	11,622 (37)	53,525 (
Military	2,047 (12)	15,742 (45)	23,465 (42)	287,311 (
Money	32,797 (11)	15,868 (30)	46,643 (34)	894,251 (1
Musical	282 (14)	2,232 (42)	3,784 (42)	6,798 (
Paintings	1,618 (20)	14,789 (85)	43,421 (68)	32,970 (
Philatelical	1,000,816 (7)	16,711 (11)	20,164 (15)	14,006,405
Negatives	26,421 (15)	422,131 (48)	1,365,206 (43)	2,093,765 (2
Photoprints	40,722 (18)	528,009 (75)	1,756,708 (67)	2,229,996 (
Phys. Science	12,330 (4)	14,592 (14)	13,474 (21)	15,764
Live Plants	1,165 (3)	554,272 (17)	354,740 (20)	1,210,000 (
Pres. Plants	23,434 (5)	289,822 (18)	824,895 (26)	4,761,205 (
Sculpture, Ind.	367 (13)	3,744 (52)	13,338 (46)	11,714 (
Sculpture, Out.	6 (5)	174 (34)	427 (36)	695 (
Textile	22,569 (19)	119,914 (71)	130,050 (49)	278,316 (2
Tools	34,035 (16)	67,939 (45)	65,636 (44)	38,148 (
Toy & Dolls	5,684 (14)	29,041 (47)	47,993 (40)	28,017 (
Transportation	209 (11)	1,191 (30)	12,196 (32)	8,087 (1
Works on Paper	1,676 (16)	48,858 (71)	99,504 (59)	2,439,804 (
Other	9,957 (6)	47,799 (25)	352,669 (20)	169,900 (

Percentages of Reported Objects by Budget Level

Object	$50,000-100,000	$101,000-500,000	$501,000-3,000,000	$3,000,000+
Aero	4%	2%	53%	41%
Live Animals	*	*	13%	86%
Pres. Animals	*	7%	21%	72%
Anthropology	*	6%	54%	39%
Archeology	*	6%	84%	9%
Books	5%	10%	11%	74%
Ceramics, Glass	2%	14%	23%	61%
Documents	*	33%	18%	49%
Film	1%	7%	35%	57%
Furniture	3%	28%	37%	32%
Geology	*	3%	24%	73%
Hist. House	*	6%	8%	85%
Hist. Sites	9%	34%	32%	25%
Horological	*	3%	5%	91%
Landscape	2%	54%	20%	24%
Machinery	1%	5%	4%	90%
Maritime Vessels		*	2%	15%
Medical	3%	17%	18%	62%
Medals	2%	16%	15%	67%
Military	*	5%	7%	87%
Money	3%	2%	5%	90%
Musical	2%	17%	29%	52%
Paintings	2%	16%	47%	35%
Philatelical	6%	*	*	93%
Negatives	*	11%	35%	53%
Photoprints	*	12%	38%	49%
Phys. Science	22%	26%	24%	28%
Live Plants	*	26%	17%	57%
Pres. Plants	*	5%	14%	80%
Sculpture, Ind.	1%	13%	46%	40%
Sculpture, Out.	*	13%	33%	53%
Textile	4%	22%	24%	50%
Tools	17%	33%	32%	18%
Toy & Dolls	5%	26%	44%	25%
Transportation	*	6%	56%	37%
Works on Paper	*	2%	4%	94%
Other	2%	8%	61%	29%

* = less than 1 percent

Respondents were asked to complete the following chart regarding the current condition of their objects in each category? Serious need means that there is a threat of partial or complete loss of the object unless it is treated soon. Need refers to a need for routine treatment. No need means that the object is in very good condition or already conserved. In-house treatment refers to treatment done by museum staff. Nonstaff/consultant refers to that carried-out off-premises or done by non-museum staff members.

Conditions of Objects by Type (Percentages)

	Serious Need%	Need%	No Need%	Don't Know%	Treated in Last 10 Yrs.	
					In	Consult
All objects	5	33	22	40	19	3
Aeronautics	4	62	33	1	1	*
Live animals	*	21	62	16	53	41
Preserved animals	*	38	16	45	43	*
Anthropological	7	37	47	9	9	*
Archeological	3	45	34	18	5	*
Books	14	17	18	51	3	3
Ceramics, Glass	4	15	63	18	4	*
Documents	8	29	11	52	6	2
Film, excluding photographs	9	38	36	17	5	26
Furniture	11	39	32	18	7	3
Geological	5	31	45	19	7	*
Historic houses and buildings	3	12	7	78	6	3
Historic sites	6	50	28	16	9	20
Horological	2	42	5	51	2	1
Landscape features	8	26	61	5	30	2
Machinery	1	9	5	81	2	*
Maritime vessels	8	12	6	68	12	*
Medical	9	29	57	5	*	
Medals	3	9	28	60	*	*
Military, incl. guns, weapons	4	12	7	77	3	*
Money and numismatics	*	2	11	87	*	*
Musical instruments	9	26	23	42	3	3
Paintings	9	31	44	16	10	7
Philatelical	*	2	6	92	*	*
Photography, negatives	19	25	33	23	21	*
Photography, prints	9	17	48	26	19	3
Physical science objects	2	12	79	7	26	11
Plants, live	17	45	36	2	34	*
Plants, preserved	21	40	14	25	42	26
Sculpture, indoor	7	18	65	10	18	3
Sculpture, outdoor	17	23	40	20	16	*
Textiles and costumes	10	38	40	12	6	2
Tools	2	27	50	18	10	*
Toys and dolls	6	27	73	20	5	2
Transportation, excl. air	2	18	51	29	3	1
Works of art on paper	29	47	20	4	1	3
Other	5	14	30	51	8	*

* = less than 1 percent

Objects in Serious Need of Treatment

The following summarizes object categories for which the percentages reported in serious need of treatment are highest.

Type of Object	Percent Reported	Estimated Number of Objects Affected
Works of Art on Paper	29	751,054
Preserved Plants	21	1,238,864
Photographic Negatives	19	742,429
Live Plants	17	260,430
Outdoor Sculpture	17	221
Books	14	553,855
Furniture	11	8,510
Textiles	10	5,508
		3,560,871

Objects For Which Condition Is Unknown

The following chart summarizes object categories for which the conditions reported as unknown are greater than 50 percent.

	Percent Reported	Estimated Number of Objects Affected
Animals, Preserved	44	17,179,019
Books	51	2,017,616
Documents	52	7,543,959
Historic House	78	3,062
Horological	51	26,747
Machinery	81	64,380
Maritime Vessels	68	3,332
Medical	57	69,718
Medals	60	47,926
Military	77	252,995
Money	87	860,916
Philatelical	92	13,840,568
Other	51	295,965

D. If you answered "non-staff/consultant" in the previous chart regarding treatment of objects, answer the following the primary affiliation of your non-staff consultants. Botanical gardens should include landscape or restoration architects and land planners.

Percentage of Each Museum Type Using Consultants to Treat Objects

Art	55
Botanical	21
Children	33
General	59
History	42
Hist. Site	30
Nat. Hist.	18
Planetaria	14
Science	32
Zoo/Aqua	49
All Museums	40

D. 1. Are your consultants employed by nonprofit cooperatives (regional) labs? (For zoos and botanical gardens, include state, university, extension or local hospitals and animal labs.)

	No. of Respondents	% of Respondents
Nonprofit		
Yes	72	23%

Respondents reported from 1 to 55 consultants, 58% reported using 1 or 2 consultants employed by nonprofit cooperatives.

D. 2. Are your consultants employed by private conservation laboratories or private firms?

	No. of Respondents	% of Respondents
Private Conservation Lab. Yes	82	26%

Respondents reported using 1-25 consultants. 53% reported using 1 or 2 consultants employed by private labs.

D. 3. Are your consultants employed by other museums? (Do not include above categories)

	No. of Respondents	% of Respondents
Other Museums Yes	66	21%

From 1-80 reported. 73% of these reported using 1 or 2 consultants employed by other museums.

E. Does your museum provide treatment of objects or specimens other than those belonging to the institution? If yes, are fees charged for these services?

Yes, with fee	5%
Yes, without fee	11%

Percentage of Museums that Treat Objects or Specimens Other Than Those Belonging to the Institution

	Don't Treat	Treat With Fee	Treat Without Fee
Art	85	6	9
Botanical	89	0	11
Children	92	0	8
General	89	0	11
History	92	5	3
Hist. Site	100	0	0
Nat. Hist.	82	11	7
Planetaria	100	0	0
Science	90	0	10
Zoo/Aqua	46	15	39
All Museums	84	5	11

This analysis is based on 314 responses.

F. Does your museum provide its own staff or other museum professionals with training in any of the following areas? If yes, specify whether the training is done in-house or on the outside.

Training in Collections Care and Conservation

	Percent Providing Training	Of Those Providing In-house	Outside Program	Both
Training in:				
Routine handling of objects (including specimens and animals)	82	78	8	14
Preparation of condition reports	47	80	9	11
Security of objects on exhibit (refers to object, not visitor safety)	64	79	10	11
Environmental (control) monitoring	51	77	14	9
Conservation	52	62	21	17

Percentage of Museums Offering Different Types of Training by Museum Type

	Handle Objects	Prepare Reports	Exhibit Security	Monitor Environ.	Conser-vation
Art	86	74	85	71	45
Botanical	79	29	36	54	64
Children	58	50	67	50	33
General	82	63	74	70	52
History	90	52	79	50	57
Hist. Site	70	26	74	44	26
Nat. Hist.	71	25	46	46	46
Planetaria	29	14	43	14	43
Science	53	16	58	32	42
Zoo/Aqua	95	67	64	62	80
All museums	82	47	64	51	52

Percentage Use of Outside Staff or Programs for Different Types of Training by Museum Type

	Handle Objects	Prepare Reports	Exhibit Security	Monitor Environ.	Conservation
Art	15	15	29	22	56
Botanical	11	0	20	27	22
Children	17	14	0	14	0
General	11	12	6	12	25
History	26	38	31	35	57
Hist. Site	27	50	26	27	62
Nat. Hist.	11	14	25	33	23
Planetaria	0	0	0	0	0
Science	16	66	30	40	37
Zoo/Aqua	15	4	0	8	27

G. Within the past five years has the museum had information programs on conservation of objects and collections (records) management for the general public? Check appropriate area.

Percentage of Museums Offering Public Programs About Conservation and/or Collection Management in the Last Five Years

Art	48
Botanical	61
Children	8
General	44
History	50
Hist. Site	41
Nat. Hist.	46
Planetaria	14
Science	21
Zoo/Aqua	80
All museums	48

Programs on Conservation of Collections and Collections (Records) Management for the General Public (in percentages)

Kind of Program	Conservation	Record Management	Both
Consultation days	8	2	5
Workshops	13	4	8
Films & other media programs	13	1	3
Exhibits	14	2	2
Lectures	22	5	11
Other programs	5	2	5

H. Does your museum face problems that affect the proper care of your collections? (Indicate the level of problem. If not applicable, check N/A column.)

Percentage of Museums Reporting Activities that Affect the Care of Collections

	Severe Problem	Problem	No Problem
Lack of:			
*Designated funds for conservation	28	55	17
*Proper storage space/holding and quarantine areas	33	54	13
*Proper storage equipment/plant equipment (ex. cherry picker, pesticide sprayer)	18	52	30
Exhibition space	9	51	40
*Conservation laboratory (including propagation and nursery spaces/ veterinary hospital/breeding facilities	26	45	29
Availability of contract conservators	5	25	70
*Qualified conservation staff, in-house	17	39	44
Control of illumination	8	44	48
Control of pests	6	46	48
Control of mildew and mold	6	33	61
Air pollution control	7	33	60
Security	4	41	55
*Humidity control	19	46	35
*Temperature control	18	41	42
Staff awareness of conservation needs	2	26	72
*Trustee awareness of conservation needs	14	47	40
Water resources/proper animal diet	3	13	85

* = most pervasive problems. All numbers are percentages of those responding in one of the three categories. For most items the number of responses is between 250 and 290.

An analysis by type of museum and budget size of the problems affecting the care of collections is presented in Table 42, Appendix A.

V. COLLECTIONS MANAGEMENT

Refer to the glossary for definitions of "inventory" and "catalogue."

Answers to Sections A and B by museum type are presented in the chart following Section B.

A. 1. What percentage of the collection is exhibited on a regular basis? Overall average response: 44%.

2. What percentage of the collection is inventoried? (For botanical gardens, what percentage of the collection is surveyed or mapped?) Overall average response: 77%

3. Is your inventory/survey up-to-date? Overall average response: 53% reported in the affirmative.

4. What percentage of the collection is catalogued? (i.e., detailed accession records). Overall average response: 68%.

5. What percentage of the collection is photographed? (For botanical gardens, what percentage of the collection is documented by herbarium specimens?) Overall average response: 30%.

B. Rate of growth of the collection over the last five years. Overall average response: 19%.

Collection Use and Management by Museum Type (in percentages)

	Collection Regularly Exhibited	Collection Inventoried	Inventory Up to Date	Collection Cataloged	Collection Photographed	Growth in last 5 Years
Art	28	81	62	79	50	18
Botanical*	85	64	32	54	22*	12
Children	50	78	58	56	30	25
General	25	72	49	68	18	20
History	32	76	78	68	21	10
Hist. Site	60	87	67	72	42	5
Nat. Hist.	14	64	32	58	13	27
Planetaria	31	58	57	51	31	13
Science	37	72	37	54	30	42
Zoo/Aqua	86	94	82	77	27	22
All Museums	44	77	53	68	30	19

*Botanical gardens answer this question by reporting what percentage of their collections are documented by herbarium species.

C. Collections records: What type of file is used?

	Manual File Only	Computer File Only	Manual and Computer
1. Inventory	73%	6%	17%
2. Catalogue/ detailed records	76%	5%	12%

Percentage of Museums Using Manual and/or Computer Files for Inventory Records

	Manual Only	Computer Only	Manual and Computer	Computer Rank*
Art	85	3	11	6
Botanical	50	11	29	2
Children	92	0	8	10
General	81	4	15	5
History	87	2	8	9
Hist. Site	81	7	4	8
Nat. Hist.	68	0	29	3
Planetaria	71	14	0	7
Science	58	11	11	4
Zoo/Aqua	43	13	41	1
All Museums	73	6	17	

* The "computer rank" is based on the degree to which museums of a particular type report using computers only, or both manual and computerized records. This column gives an indication of the degree to which museums have computerized their inventory records. The rank of 1 indicates that zoos/aquariums, with 54 percent reporting some use of computers, are the most computerized in regard to inventories.

This analysis is based on 314 responses

Percentage of Museums Using Manual and/or Computer Files for Catalog (Detailed Accession) Records

	Manual Only	Computer Only	Manual and Computer	Computer Rank*
Art	85	3	9	5
Botanical	46	11	21	2
Children	100	0	0	10
General	81	0	19	4
History	89	3	7	7
Hist. Site	78	7	4	6
Nat. Hist.	54	4	36	1
Planetaria	86	0	0	9
Science	79	0	0	8
Zoo/Aqua	64	13	10	3
All Museums	76	5	12	

* The "computer rank" is based on the degree to which museums of a particular type report using computers only, or both manual and computerized catalogs. This column gives an indication of the degree to which museums have computerized their catalog records. The rank of 1 indicates that natural history museums, with 40 percent reporting some use of computers, are the most computerized in regard to cataloguing.

This analysis is based on 314 responses.

3. If computerized, what type of software is used? Circle all that apply.

1. GRIPHOS 2 museums (1 historic site, 1 natural history
2. SELGEM 5 museums (1 art, 2 natural hist., 1 history, 1 historic site
3. DARIS 1 museum (art)
4. ISIS 19 zoos/aquariums
5. Other 1 natural hist., 1 botanical garden, 1 botanical garden)

D. 1. Does the museum have written policies on accessions?

	No. of Responses	% of Responses
Yes	235	75%
No or N/A	79	25%
	314	100%

2. Does the museum have written policies on deaccessioning?

	No. of Responses	% of Responses
Yes	216	69%
No or N/A	98	31%
	314	100%

3. Does the museum have written policies on lending and borrowing objects?

	No. of Responses	% of Responses
Yes	235	75%
No or N/A	79	25%
	314	100%

Percentage of Museums with Written Policies for Accessioning, Deaccessioning and Lending and Borrowing Objects

Policy	Written Accession Policy	Written Deaccession Policy	Written Lending & Borrowing
Art	76	72	72
Botanical	64	46	29*
Children	58	58	92
General	96	93	82
History	87	84	90
Hist. Site	74	67	82
Nat. Hist.	79	68	93
Planetaria	14*	14*	43*
Science	58	53	63*
Zoo/Aqua	67	62	69
Overall Average	75	69	75

This analysis is based on 314 respondents. * = over 10% of respondents omitted this item and/or marked it Not Applicable.

4. Are conservation considerations included in your loan policy, whether written or not?

	No. of Responses	% of Responses
Yes	244	78%
No or N/A	70	22%
	314	100%

5. If your museum has a conservator/veterinarian/ horticulturist on staff, is he/she included in accessioning decisions?

	No. of Responses	% of Responses
Accessions		
Yes	101	32%
No	41	13%
N/A	172	55%
	314	
Deaccessions:		
Yes	88	28%
No	50	16%
N/A	176	56%
	314	

Percentage of Museums with Various Collections Management Practices

	Conservation considered in loan policy?	Conservator, veterinarian or horticulturalist included in accessioning decisions?	Conservator, veterinarian or horticulturalist included in deaccessioning decisions?
	Yes	Yes	Yes
Art	91	21	11
Botanical	25	86	75
Children	75	17	17
General	89	11	11
History	86	26	23
Hist. Site	80	11	07
Planetaria	57	29	29
Science	63	16	16
Zoo/Aqua	82	72	72
Total	78	32	28

VI MUSEUM ACTIVITIES

A. Check the activities for the care and management of the collections that your museum already undertakes to your satisfaction.

B. What will be your museum's six most important activities in the next decade for the care of your collections? Choose only 6 and rank them (1 is highest; 6 is lowest).

	A. Activities undertaken currently to satisfaction	B. Six activities to be undertaken
1. Registration of collections	71%	
2. Cataloguing of collections	64%	6
3. Computerization of inventory and catalogue data	20%	2
4. Developing adequate storage space	33%	3
5. Developing adequate security	56%	
6. Upgrading temperature and humidity control	29%	4
7. Conservation of objects/collections	38%	1
8. Education of museum personnel	50%	5
9. Education of museum trustees	26%	
10. Education of general public	42%	
11. Examination of collections conditions	58%	6
12. Obtaining conservator/veterinarian horticulturist on staff	19%	
13. Upgrading laboratory equipment	15%	

Responses summarized are based on questionnaires submitted by 314 museums.

A detailed analysis of the percentages of museums ranking their most important collections care and management activities for the next decade is presented in Table 42, Appendix A.

SUPPLEMENTAL INFORMATION

BOTANICAL GARDENS AND ARBORETA

Twenty-four institutions responded to this Section.

II. Physical Facilities

C. Indicate the state of repair for the following outdoor areas/features:

State of Repair of Outdoor Physical Facilities
at Botanical Gardens and Arboretums (in percentages)

Feature	Excellent	Good	Poor	Major Repair	Not Applicable	Total
Perimeter fence around collection areas	0	4	0	4	92	100%
Garden architecture (walls, fountains, etc.)	17	46	8	8	21	100%
Walkways and enclosures (for exhibition and security of plants)	17	61	9	4	9	100%
Roadways and service access to collections	17	71	4	9	0	100%

IV. Conservation of Collections

J.1. Does your institution preserve the rare and endangered species growing within your region?

Yes: 5 museums, or 21 percent of respondents to this section.

Does your institution preserve the rare and endangered species growing outside your region?

Yes: 15 museums, or 65 percent of respondents to this section.

2. Does your institution research and inventory plants or plant habitats that are in danger of extinction?

Yes: 10 museums, or 43 percent of respondents to this section.

Does it preserve or assist in the preservation of plants or plant habitats outside your garden in danger of extinction?

Yes: 7 museums, or 29 percent of respondents to this section.

3. Does your institution regularly participate in plant rescue programs?

Yes: 9 museums, or 38 percent of respondents to this section.

4. Does your institution participate in any cooperative plant preservation programs (Nature Conservancy, State floras, Heritage Trust, National Champions, etc.)?

Yes: 7 museums, or 29 percent of respondents to this section.

5. Does your institution participate in any cooperative plant evaluation programs (National Arboretum evaluation, with other botanical gardens, regional programs, with nurseries or plant societies, etc.)?

Yes: 11 museums, or 46 percent of respondents to this section.

6. Does your institution participate in and/or support explorations for plants of value from climates similar to your institution?

Yes: 17 museums, or 71 percent of respondents to this section.

ZOOS AND AQUARIA

I. General Information

B. Circle one of the categories that best describes your institution:

Zoological Park, Aquarium, Wildlife Park, Oceanarium, Combination, Other.

Responses	30	Zoological Parks
	7	Aquariums
	1	Other
Total	38	Responding Institutions

II. Physical Facilities

F. Does your institution operate a branch zoological park, aquarium or off-premises captive-breeding facility?

Yes: 5 museums, or 13 percent of respondents to this section.

IV. Conservation of Collections

E. Do you propagate rare and endangered species in captivity on a long-term basis?

Yes: 30 museums, or 79 percent of respondents to this section.

V. Collections (Records) Management

C. 1. Are you a participant in ISIS?

Yes: 28 museums, or 74 percent of respondents to this section.

If Yes, is your ISIS data current?

Yes: 25 museums, or 89 percent of respondents with ISIS data.

If No, do you have a system for retaining data on your collection?

Yes: 5 museums, or 13 percent of respondents to this section, reported using systems other than ISIS to retain data on their collections.

2. Other than space, do your animal enclosures 1) need significant improvement; 2) need some improvement; 3) need no improvement?

	Number of Museums	Percentage of Respondents
1) Need significant improvement	10	27
2) Need some improvement	26	68
3) Need no improvement	2	5

3. In terms of space provided for the animals, do your enclosures 1) need significant improvement; 2) need some improvement; 3) need no improvement?

	Number of Museums	Percentage of Respondents
1) Need significant improvement	5	13
2) Need some improvement	24	63
3) Need no improvement	9	24

4) Does the experience and training of your institution's staff in the care and maintenance of the animal collection 1) need significant improvement; 2) need some improvement 3) need no improvement?

	Number of Museums	Percentage of Respondents
1) Need significant improvement	4	10
2) Need some improvement	26	68
3) Need no improvement	8	22

5) Do you participate with institutions in cooperative (breeding) conservation programs?

Yes; 35 museums, or 92 percent of respondents to this section.

6) How many of your institutions' animals are generally on loan to other institutions for conservation purposes?

27 institutions, or 71 percent of respondents to this section, reported having animals generally on loan to other institutions. Institutions reported that the number of animals on loan at any given time for conservation purposes is from none to 345. For the 27 institutions that generally have animals out on loan, the median number on loan is around 20. Seven institutions reported having over one hundred animals on loan.

7) How many specimens is your institution holding on loan from other institutions for conservation and breeding purposes?

Nineteen institutions or 50 percent of respondents to this section, reported holding animals from other institutions for conservation purposes. Of these 19 museums, about half have 50 or more on hand. Six museums reported holding more than 100 animals at a time. The largest number reported being held for conservation purposes is 196.

8) Circle all the national and international conservation organizations your organization belongs to:

AAZPA, World Wildlife Fund, IUCN, Other, None.

Thirty-three, or 87 percent of respondents to this section, belong to the American Association of Zoological Parks and Aquariums (AAZPA). Five institutions do not belong to any of these associations.

9) Does your institution's education program for the general public utilize a conservation theme?

Yes: 34 museums, or 89 percent of respondents to this section.

MUSEUMS WITH BUDGETS LESS THAN $50,000

Although museums with budgets below $50,000 were not included in the four budget level analysis provided throughout the survey, 28 museums with budgets between $35,000 and $50,000 returned questionnaires. The responses of these museums, housing roughly 330,000 objects, provide the following data. An analysis of these museums by type and by region follows.

Type of Museum	Number of Respondents with budgets under $50,000	% of Respondents with budgets under $50,000
Art	1	3.6
Botanical garden/arboreta	1	3.6
Children's	0	0
General	4	14.2
History	6	21.4
Historic Site	7	25.0
Natural History	3	10.7
Planetarium	1	3.6
Science	1	3.6
Zoo/Aquarium	3	10.7
Other	1	3.6
	28	100.0%

A regional analysis was possible for 22 of these institutions.

Region	No. of Responses	Percentage of Responses
New England	1	4.5%
Northeast	6	27.3%
Midwest	3	13.6%
Southeast	5	22.7%
Mountain-Plains	5	22.7%
West	2	9.1
	22	100.0%

Conservation

Long-range Plan. Museums were asked if they have long-range plans for conservation. Of the 18 responding to this question 12 (67%) do not have long-range plans.

Survey of Collection. The following table summarizes how much of their collections have been surveyed for conservation purposes. While 37 percent have not surveyed their collections at all, the same percentage have surveyed more than half of their collections.

Percent Surveyed	Percent of Museums
0	37
1-25	16
26-50	11
51-75	5
76-100	32

Forty-one percent of these museums had surveyed their collections within the last five years.

Current Activities. Museums were asked how well they perform various activities that affect the care of the collections. These data indicate that small museums, like larger institutions, are most satisfied with their registration of collections (73%). The areas in which small museums report the least satisfaction are education of trustees (18%) and staff (41%), computerization of collection data (18%), climate control (41%) and storage (50%). No small museums report being satisfied with efforts to add professional conservation personnel to their staffs.

When compared with larger museums, museums with budgets under $50,000 are noticeably different in their reports of how well they perform collections care and management activities. They are more satisfied with their storage space (50%) than are larger museums (33%), but are less satisfied with their efforts to educate museum personnel (41% versus 50% for larger museums).

Since none of the museums reported satisfaction with the ability to obtain a conservator for staff, the response to the level of satisfaction for laboratory equipment may indicate that museums were reporting a "lack of" equipment rather than dissatisfaction with their current laboratory equipment. The same misreading may also account for the response for computerization of collections. Since the questionnaire was designed primarily for museums with budgets of at least $50,000, the survey did not take into account several realities of small museums. For instance, museums with budgets under $50,000 often do not have full-time professional staff in-house. Consequently, the needs of these museums would be represented more accurately if they had been asked about their satisfaction with their abilities to use consultants when needed.

Percertage of Small Museums Reporting Collection Care and Management Activities Currently Undertaken to Their Satisfaction

Registration of Collections	73
Cataloguing of Collections	64
Computerization of Inventory and Catalog Data	18
Development of Adequate Storage Space	50
Development of Adequate Security	59
Upgrading Climate Controls	41
Conservation of Collections	55
Education of Museum Personnel	41
Education of Museum Trustees	18
Education of General Public	50
Examination of Collections Conditions	55
Obtaining a Conservation Professional on Staff	0
Upgrading Laboratory Equipment	14

When these museums were asked to rank these same activities to reflect the six most important to be undertaken in the next decade, the responses were similar to the responses of larger museums. Of items ranked among the top six priorities by small museums, three are also among the priorities ranked by larger museums. These are computerization of inventory and catalogue data, development of adequate storage space, and conservation of the collections. Small museums also gave high importance to cataloguing their collections and educating museum personnel, while larger museums gave higher priority to upgrading their climate control systems.

Recent treatment. Seventy-five percent reported that they had treated objects within the last ten years. The quality of the response to this question is a problem in this analysis. No indication of the number of objects treated or the frequency can be determined. Further, the high response for treatment by in-house conservation staff at this budget level indicates a possible misreading of the question. Sixty-one percent of small museums reported treating objects in-house within the last ten years and 36 percent reported having had objects treated by non-staff consultants during that same period. Nonetheless, none of the museums reported satisfaction with their efforts to obtain a conservator on staff. Again, in the context of small museums, the lack of satisfaction expressed regarding efforts to obtain conservation expertise is probably for non-staff consultants instead of on-staff personnel.

APPENDIX A

ADDITIONAL STATISTICAL TABLES

Table 1 Budget Categories of Participating Museums with Budgets of $50,000 and Above
Table 2 Condition of Buildings by Museum Type and Budget Level
Table 3 Year Expansion Took Place by Museum Type and Budget Level
Table 4 Year Renovation Took Place by Museum Type and Budget Level
Table 5 Curator (Mean Responses)
Table 6 Registrar (Mean Responses)
Table 7 Conservator (Mean Responses)
Table 8 Conservation Scientist (Mean Responses)
Table 9 Conservation Technician (Mean Responses)
Table 10 Security (Mean Responses)
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Table 12 Staff Analysis for Art Museums
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Table 23 Equipment Budget
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Table 28 Reported Funds from Federal Sources for Conservation
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Table 30 Reported Funds from Private Foundations for Conservation
Table 31 Reported Funds from Private Foundations for Collections Management

Table 32 Reported Funds from Corporations for Conservation
Table 33 Reported Funds from Corporations for Collections Management
Table 34 Reported Funds from Individual and Local Groups for Conservation
Table 35 Reported Funds from Individual and Local Private Support Groups for Collec. Managememt
Table 36 Reported Public Funds from States for Conservation
Table 37 Reported Public Funds from States for Collections Management
Table 38 Reported Local Public Funds for Conservation
Table 39 Reported Local Public Funds for Collections Management
Table 40 Reported Funds from Other Sources for Conservation
Table 41 Reported Funds from Other Sources for Collections Management
Table 42 Percentage of Museums Ranking Most Important Activities for the Next Decade

Table 1

Budget Categories of Participating Museums
Budgets of $50,000 and Above

Budget	$50-150K	150-350K	350-600K	600-1M	1M-2M	2M-3M	3M+	Total
Art	10	15	13	8	3	5	11	65
Botanical	6	7	6	3	4	0	2	28
Children's	4	2	3	0	1	1	1	12
General	4	5	6	4	3	3	2	27
History	19	16	9	8	5	0	5	62
Hist. Site	11	10	2	3	1	0	0	27
Nat. Hist.	5	7	3	3	4	2	4	28
Planetaria	2	3	1	0	1	0	0	7
Science	3	4	3	3	1	2	3	19
Zoo/Aqua	2	8	7	3	7	4	8	39
Other	5	7	2	1	1	2	4	22
Total	71	84	55	36	31	19	40	336

This table is based on responses by 336 museums.

Appendix A
Table 2

Condition of Buildings by Museum Type and Budget Level

Building	1 N	1 Mean	2 N	2 Mean	3 N	3 Mean	4 N	4 Mean
Art	72	2.81	19	3.50	66	3.31	0	
50-100K	6	2.67	0		5	3.20	0	
100-500K	25	2.70	2	3.50	26	3.29	0	
500K-3M	27	2.84	6	3.12	23	3.28	0	
3M+	14	3.04	11	3.68	12	3.45	0	
Botanical	27	2.88	22	2.73	28	3.04	2	4.00
50-100K	5	3.40	2	3.50	4	3.50	0	
100-500K	12	2.50*	10	2.50*	15	2.87	0	
500K-3M	8	3.15	8	3.00*	7	3.36	0	
3M+	2	2.75	1	2.08	2	2.25	2	4.00
Children	12	3.08	2	4.00	12	3.17	0	
50-100K	4	3.00	0		4	3.20	0	
100-500K	5	3.20	1	4.00	5	3.00	0	
500K-3M	2	2.50*	0		2	3.00	0	
3M+	1	4.00	1	4.00	1	4.00	0	
General	29	2.89	2	3.60	27	3.17	0	4.00
50-100K	3	2.67	0		2	3.00	0	
100-500K	9	2.44*	1	3.00*	8	3.20	0	
500K-3M	14	3.07	2	4.00	15	3.16	0	
3M+	3	3.64	2	3.50	2	3.00	0	
History	74	2.76	21	3.34	78	3.05	0	
50-100K	17	2.82	3	3.33	15	2.93I	0	
100-500K	34	2.69	7	3.29	35	3.10	0	
500K-3m	16	3.13	7	3.50	23	3.10	0	
3M+	7	2.09*	4	3.17	5	2.81*	0	
Hist. Site	36	2.87	4	2.75	32	3.09	0	
50-100K	6	2.60I	0		6	3.21	0	
100-500K	25	2.86	2	2.00*	21	2.96*	0	
500K-3M	5	3.21	2	3.50	5	3.52	0	
3M+		---		---		---		---
Nat. Hist.	33	2.79	9	3.44	29	3.05	3	3.67
50-100K	4	3.00	0		4	3.25	0	
100-500K	16	2.75	5	3.40	15	2.97	2	4.00
500K-3M	10	2.70	4	3.50	8	3.00	1	
3M+	3	3.00	0		2	3.50	0	
Planetaria	7	3.29	1	4.00	9	3.22	0	
50-100K	1	3.00	0		1	3.00	0	
100-500K	4	3.00	1	4.00	7	3.29	0	
500K-3M	2	4.00	0		1	3.00	0	
3M+		---		---		---		---
Science	21	2.66	13	2.69	22	3.13	2	2.50
50-100K	4	2.50*	2	2.00*	3	2.67*	0	
100-500K	6	2.83	3	2.67*	7	3.43	0	
500K-3M	8	2.54*	6	3.00*	10	3.09	2	
3M+	3	2.83	2	2.50*	2	3.00	0	
Zoo/Aqua	36	2.97	35	3.16	39	2.89	7	3.03
50-100K		---		---		---		---
100-500K	12	2.84	10	3.03	12	2.84*	0	
500K-3M	16	3.19	18	3.26	20	3.01	5	3.20
3M+	8	2.72	7	3.07	7	2.64*	2	

Buildings: 1 = collection storage (incl. herbaria); 2 = conservation lab/vet hospital/propagation and nursery facilities; 3= exhibition space; 4 = field research station/breeding farm; 5 = historic structure/site; 6 = preparation/holding quarantine and animal food prep areas; 7 = registration/records keeping area; 8 = services (Shipping, general maintenance, supply storage).

--- = no museums in this category in the sample.

* = seven lowest average ratings per building within the museum type/budget level breakdown.

5		6		7		8	
N	Mean	N	Mean	N	Mean	N	Mean
26	2.38	34	2.91	63	3.31	68	2.90
2	2.50	1	3.00	4	3.25	4	3.25
12	2.44*	16	2.94	25	3.20	27	2.69
9	2.44*	8	2.38	22	3.39	24	2.96
3	1.89*	9	3.31	12	3.42	13	3.10
8	2.81	5	2.40	22	3.18	23	2.81
1	3.00	0		3	3.67	4	3.50
4	2.65	2	2.00*	12	3.00*	12	2.77
3	3.00	2	2.50*	5	3.50	5	2.98
0		1	3.00	2	2.75*	2	1.25*
1	3.00	3	3.67	11	3.27	12	2.92
0		0		3	3.33	4	3.25
1	3.00	1	4.00	5	3.00*	5	2.60*
0		1	3.00	2	3.50	2	2.50*
0		1	4.00	1	4.00	1	4.00
11	2.72	12	2.83	29	3.24	29	3.03
0		2	3.00	3	3.67	3	3.67
3	3.33	3	1.67*	9	3.00*	9	2.78
7	2.47*	6	3.17	15	3.27	15	3.07
1	2.67	1	4.00	2	3.50	2	3.00
46	2.88	18	3.03	65	3.17	70	2.87
12	2.96	2	2.50*	12	3.33	14	2.86
16	2.79	9	3.22	26	3.09	27	2.90
15	2.91	6	3.25	20	3.26	21	3.00
3	2.83	1	1.00*	7	2.93*	8	2.46*
30	3.15	4	2.25	27	3.19	29	3.07
6	2.75	0		5	3.20	6	2.83
20	3.20	3	2.00*	19	3.05	20	3.10
4	3.48	1	3.00	3	4.00	3	3.33
	---		---		---		---
5	2.00	17	2.85	26	3.17	27	2.93
1	1.00*	0		2	3.00*	2	2.50*
2	2.50	7	3.14	14	3.14	15	2.73
1	3.00	8	2.56	7	3.21	7	3.29
1	1.00*	2	3.00	3	3.33	3	3.33
4	3.25	1	3.00	5	3.40	7	3.86
0		0		0		0	
4	3.25	1	3.00	4	3.25	5	3.80
0		0		1	4.00	2	4.00
	---		---		---		---
7	3.14	11	2.63	18	2.94	18	2.69
0		1	2.00*	2	3.00*	4	2.25*
3	3.50	3	3.33	6	3.00*	4	3.00
4	2.88	7	2.42	9	2.89*	9	2.83
0		0		1	3.00*	1	2.00*
8	2.70	35	3.08	35	3.21	40	2.94
	---		---		---		---
2	3.00	12	3.21	14	3.14	14	3.00
3	2.33*	15	3.01	14	3.35	18	2.90
3	2.87	8	3.03	7	3.05	8	2.90

Table 3
Year Expansion Took Place by Museum Type and Budget Level

	74	75	76	77	78	79	80	81	82	83	84	Total
Art	3	2	2	3	2				3	3	6	24
50-100K		1		1								
100-500K	2				1					1	2	
500K-3M	1	1	2	2					2		2	
3M+					1				1	2	2	
Botanical			1	2		1	2	2			4	12
50-100K											1	
100K-500K				1		1	1	1			1	
500K-3M			1	1			1	1			1	
3M+											1	
Children	1	1		1			2			2	3	10
50-100K							1				1	
100-500K	1	1								1	2	
500K-3M				1			1					
3M+										1		
General	1			1		2		2	1	3	3	13
50-100K									1		1	
100K-500K	1											
500K-3M				1		1		1		1	2	
3M+						1		1		2		
History	1		1	1	1		5	2	4	7	12	34
50-100K									1	2	3	
100K-500K	1		1		1		4		1		3	
500K-3M				1			1	2	1	3	5	
3M+									1	2	1	
Historic Site		2	2	1		1	1		1	2	1	11
50-100K			1									
100K-500K		2	1			1				2		
500K-3M				1			1		1		1	
Natural History	1	1		1	2						2	7
50-100K											1	
100K-500K	1	1		1	2							
3M+											1	
Planetarium												
Science					2			3		1	3	7
50-100K					1							
100K-500K								1			1	
500K-3M								2			3	
3M+					1							
Zoo/Aquarium		1			3			4	2	4	9	23
100-500K								1	1	2	3	
500K-3M					3			3		1	3	
3M+									1	1	3	
Total	7	7	6	10	10	4	10	13	11	22	43	141

Table 4
Year Renovation Took Place by Museum Type and Budget Level

	74	75	76	77	78	79	80	81	82	83	84	Total
Art 2	2		4					5	6	12	31	
50-100K												
100-500K	1	1		1					1	3	3	
500K-3M	1			2					3		6	
3M+		1		1					1	3	3	
Botanical			1			1	1		2	6	6	17
50-100K										3		
100-500K										1	5	
500K-3M			1			1	1		1	2	1	
3M+									1			
Children				1			1	1	1	1	1	6
50-100K				1						1	1	
100-500K												
500K-3M							1		1			
3M+								1				
General			1			2		3	1	5	6	18
50-100K			1								2	
100-500K						1		2			2	
500K-3M									1	5	2	
3M+						1		1				
History	1	1	1	1		1	3	2	3	7	13	33
50-100K									1	3	3	
100-500K	1		1			1	3	1	1	0	6	
500K-3M		1		1				1	1	3	2	
3M+										1	2	
Hist. Site		3		1		1		1	1	2	6	15
50-100K		1									2	
100-500K		1		1		1		1	1	2	3	
500K-3M		1									1	
Nat. Hist.		1					2	1		1	3	8
50-100K								1			1	
100-500K		2					1					
500K-3M							1			1	1	
3M+											1	
Planetariums											2	2
50-100K												
100-500K										2		
Science				1	1			4			3	9
50-100K											1	
100-500K				1	1			1				
500K-3M								2			2	
3M+								1				
Zoo/Aqua						1	1	1	4	4	17	28
100-500K									2	1	4	
500K-3M							1	1	1	2	10	
3M+						1			1	1	3	
Total 3	7	3	8	1	6	8	13	17	32	69	167	

Table 5
Curator (Mean Responses)

	FT	PT	Vol	Other
Art	3.5		1.2	.6
50-100K				
100-500K	1.0			
500K-3M	3.1	.6	2.3	.6
3M+	12.0	1.0	2.4	3.5
Botanical	1.0		.8	
50-100K	.6			
100-500K	.8			
500K-3M	1.1		2.3	
3M+	2.5			1.0
Children	.8	2.1	1.8	
50-100K		5.0		
100-500K			1.1	
500K-3M	.5	2.3		
3M+	6.0	1.0	15.0	
General	3.1		2.8	
50-100K	1.3			
100-500K	1.5	.7	.9	
500K-3M	4.1		4.2	.6
3M+	6.5		5.5	
History	2.4		1.5	
50-100K	.5			
100-500K	1.1		1.5	
500K-3M	2.3		3.0	
3M+	15.0	.6		1.4
Hist. Site	1.0		1.4	.6
50-100K	.7		1.6	1.6
100-500K	.7		1.6	
500K-3M	2.7			1.2
Nat. Hist.	5.6	2.1	1.1	1.2
50-100K	1.7			
100-500K	1.6	1.4	.8	
500K-3M	7.1	3.8	2.0	
3M+	17.0	.8	1.2	3.0
Planetaria	1.0			
50-100K	1.0	1.0		
100-500K	.8			
500K-3M	1.6			
Science	1.7	.7	3.8	
50-100K	1.0	1.7		
100-500K	1.5		1.6	.6
500K-3M	1.9	.8	1.9	
3M+	2.4		16.7	1.0
Zoo/Aqua	2.8			
100-500K	.8			
500K-3M	2.8			
3M+	6.6			

FT = full-time; PT = part-time; VOL = volunteer.

Table 6
Registrar (Mean Responses)

	FT	PT	Vol	Other
Art	1.4			
50-100K	.7	.8		
100-500K	.6			
500K-3M	1.3		1.0	
3M+	4.4			
Botanical	.6			
50-100K	.6		.8	
100-500K				
500K-3M	.8	.6		
3M+	1.0			
Children	.7			
50-100K				
100-500K				
500K-3M	1.0			
3M+	3.0	1.0	4.0	
General	1.1		1.9	
50-100K	.7		.7	
100-500K	6	.8	1.0	
500K-3M	1.9		2.5	
3M+	2.0	1.0	4.5	
History	1.1		1.1	
50-100K			1.2	
100-500K			1.3	
500K-3M	1.0		.7	
3M+	14.7		1.0	
Hist. Site				
50-100K			1.2	
100-500K				
500K-3M	.6			
3M+		1.7		
Nat. Hist.	2.0	.7	2.6	
50-100K				
100-500K			1.5	
500K-3M				
3M+				
Planetaria	(None reported)			
Science			.7	
50-100K				
100-500K			.9	
500K-3M				
3M+	.9		2.0	
Zoo/Aqua	1.9			
50-100K				
100-500K				
500K-3M	.7			
3M+	7.0		.7	

FT = full-time; PT = part-time; VOL = volunteer.

Table 7
Conservator (Mean Responses)

	FT	PT	Vol	Other
Art	1.0			
50-100K				
100-500K				
500K-3M	.7			
3M+	4.5	.5		1.0
Botanical	1.4		.9	
50-100K			.8	
100-500K	1.0		1.6	
500K-3M	2.3			
3M+	2.5			
Children				
50-100K				
100-500K				
500K-3M				
3M+	1.0		1.0	
General				
50-100K				
100-500K				
500K-3M				
3M+	5.0			
History				
50-100K				
100-500K				
500K-3M			.7	
3M+	5.0			
Hist. Site			.7	
50-100K				
100-500K				
500K-3M			4.0	.6
3M+				
Nat. Hist.			.6	
50-100K				
100-500K			.9	
500K-3M				
3M+			1.2	
Planetaria (None reported)				
Science			.6	
50-100K				
100-500K			2.0	
500K-3M	.7			
3M+				
Zoo/Aqua	1.2			.6
50-100K				
100-500K				
500K-3M	.9		.8	.8
3M+	3.5			.8

FT = full-time; PT = part-time; VOL = volunteer.

Table 8
Conservation Scientist (Mean Responses)

	FT	PT	Vol	Other
Art				
50-100K				
100-500K				
500K-3M				
3M+	.9			
Botanical				.6
50-100K				
100-500K				
500K-3M				1.1
3M+	4.0	2.0		2.0
Children				
50-100K				
100-500K				
500K-3M				
3M+				
General				
50-100K				
100-500K				
500K-3M				
3M+	1.0			
History				
50-100K				
100-500K				
500K-3M				
3M+				
Hist. Site				
50-100K				
100-500K				
500K-3M				
3M+				
Nat. Hist.	2.7			
50-100K				
100-500K				
500K-3M	1.2		.8	
3M+	15.8			
Planetaria				
Science				
50-100K				
100-500K			2.0	
500K-3M				
3M+				
Zoo/Aqua	1.4		.6	
50-100K				
100-500K				
500K-3M	1.0		1.0	.6
3M+	3.9		.9	.9

FT = full-time; PT = part-time; VOL = volunteer.

Table 9
Conservation Technician (Mean Responses)

	FT	PT	Vol	Other
Art				
50-100K				
100-500K				
500K-3M				
3M+	1.1	1.2		
Botanical	7.5	1.2	1.2	
50-100K	.8		1.0	
100-500K	1.3			
500K-3M	16.3	1.8	3.0	1.1
3M+	21.0	4.5		
Children				
50-100K				
100-500K				
500K-3M				
3M+				
General	.7			
50-100K				
100-500K				
500K-3M	.6			
3M+	4.5	1.0	2.5	
History				
50-100K				
100-500K				
500K-3M				
3M+	5.1	1.8	3.2	
Hist. Site				
50-100K				
100-500K				
500K-3M	1.4			
3M+				
Nat. Hist.	1.1			
50-100K				
100-500K				
500K-3M	1.9	1.2		
3M+	2.5		1.3	
Planetaria				
Science				
50-100K				
100-500K				
500K-3M	.8			
3M+				
Zoo/Aqua	23.9	4.1	11.7	
50-100K				
100-500K	4.4	.6	2.3	
500K-3M	14.4	1.6	18.5	
3M+	66.4	15.8	13.6	1.1

FT = full-time; PT = part-time; VOL = volunteer.

Table 10

Security (Mean Responses)

	FT	PT	Vol	Other
Art	15.2	5.5	1.3	
50-100K		1.0		
100-500K	.8	1.9	1.3	
500K-3M	8.9	2.9	2.3	
3M+	51.8	21.6		
Botanical	.7	1.4		
50-100K				
100-500K				
500K-3M		1.7		
3M+	8.0	10.5		
Children	1.8	2.6		
50-100K				
100-500K				
500K-3M	7.0	3.0		
3M+	7.0	24.0		
General	2.4	1.7	1.4	
50-100K				
100-500K			1.0	
500K-3M	3.6	3.1	2.3	
3M+	8.0	2.5		
History	1.8	1.2		
50-100K			2.1	
100-500K		.8		
500K-3M	1.8	2.5		
3M+	13.3	2.9		1.4
Hist. Site				
50-100K			.6	
100-500K				
500K-3M	.8	.8		
3M+				
Nat. Hist.	3.8	1.9		
50-100K				
100-500K		.8		
500K-3M	2.4	2.2		
3M+	20.0	5.8		
Planetaria				
Science	1.8	.9		
50-100K				
100-500K	1.0			
500K-3M	1.6	.9	1.0	
3M+	4.7	3.3		
Zoo/Aqua	3.2	2.3		
50-100K				
100-500K	.6	.6		
500K-3M	2.2	.8		
3M+	9.9	8.8		

FT = full-time; PT = part-time; VOL = volunteer.

Table 11
Building and Maintenance (Mean Responses)

	FT	PT	Vol	Other
Art	8.9			
50-100K				
100-500K	1.2			
500K-3M	3.8	.8	1.3	
3M+	42.0			
Botanical	3.9	1.1	2.0	
50-100K	.8	.8		
100-500K	2.1	.8	1.9	
500K-3M	5.0	2.1	3.2	1.3
3M+	18.0			
Children	5.7	1.3		
50-100K				
100-500K	.9	.8		
500K-3M	6.0			
3M+	16.0	12.0		
General	5.7	1.4		
50-100K				
100-500K	1.3			
500K-3M	4.2	1.9		
3M+	43.5	3.0	1.0	
History	4.8	1.3	1.2	
50-100K	.6		1.4	
100-500K	1.0	1.0		
500K-3M	5.5	.9		
3M+	35.6	6.6	10.0	
Hist. Site	2.2	1.1		
50-100K		1.0	1.2	
100-500K	1.8	1.3		
500K-3M	5.6	.8		
Nat. Hist.	5.6	.8		
50-100K		1.0		
100-500K	1.5	.9		
500K-3M	1.7	.7		
3M+	30.2			1.2
Planetaria	1.4			
50-100K				
100-500K	1.8			
500K-3M	1.5			
Science	5.6	.9	1.2	
50-100K				
100-500K	1.2			
500K-3M	4.9	2.0	2.5	
3M+	20.7			
Zoo/Aqua	14.7	5.6		
100-500K	1.5			
500K-3M	11.0	7.1		
3M+	45.5	11.8		

FT = full-time; PT = part-time; VOL = volunteer.

Table 12

Staff Analysis for Art Museums

Numbers reflect percentages of museums responding and are based on the responses of 63 art museums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents that reported vacancies. For example, 14.3% of these 63 art museums report vacancies for full-time curators. This represents vacant position(s) in 9 museums.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	79.4	30.2	14.3(9)	3.2(2)
Registrar	73.0	28.6	7.9(5)	4.8(3)
Conservator	20.6	6.3	3.2(2)	-
Conservation Scientist	9.5	-	-	-
Conservation Technician	19.0	9.5	-	-
Security	46.0	57.1	7.9(5)	3.2(2)
Building Maintenance	68.3	31.7	7.9(5)	6.3(4)

Table 13

Staff Analysis for Botanical Gardens

Numbers reflect percentages of museums responding and are based on the responses of 28 botanical gardens with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 3.6% of these 28 botanical gardens report vacancies for full-time curators. This represents vacant position(s) in 1 botanical garden.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	67.9	21.4	3.6(1)	-
Registrar	64.3	28.6	-	-
Conservator	75.0	10.7	7.1(2)	-
Conservation Scientist	14.3	14.3	-	3.6(1)
Conservation Technician	71.4	32.1	7.1(2)	-
Security	14.3	35.7	3.6(1)	3.6(1)
Building Maintenance	64.3	42.9	7.1(2)	3.6(1)

Table 14

Staff Analysis for Children's Museums

Numbers reflect percentages of museums responding and are based on the responses of 12 children's museums with budgets over $50,000. Under vacant positions, the number in parenthesis refers to actual numbers of respondents reporting vacancies. For example, 8.3% of these 12 children's museums report vacancies for full-time registrars. This represents vacant position(s) in 1 museum.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part-Time
Curator	58.3	41.7	-	-
Registrar	66.7	25.0	8.3(1)	-
Conservator	41.7	-	-	-
Conservation Scientist	-	-	-	-
Conservation Technician	8.3	8.3	-	-
Security	33.3	25.0	-	-
Building Maintenance	66.7	25.0	-	-

Table 15

Staff Analysis for General Museums

Numbers reflect percentages of museums responding and are based on the responses of 27 general museums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 22.2% of these 27 general museums report vacancies for full-time curators. This represents vacant position(s) in 6 museums.

	Filled Positions (%)		Vacant Positions	
	Full Time	Part Time	Full Time	Part Time
Curator	81.5	14.8	22.2(6)	3.7(1)
Registrar	74.1	29.6	3.7(1)	-
Conservator	14.8	3.7	3.7(1)	-
Conservation Scientist	11.1	7.4	-	-
Conservation Technician	25.9	11.1	-	-
Security	51.9	25.9	-	-
Building Maintenance	87.8	44.4	7.4(2)	3.7(1)

Table 16

Staff Analysis for History Museums

Numbers reflect percentages of museums responding and are based on the responses of 60 history museums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 15% of these 60 history museums report vacancies for full-time curators. This represents vacant position(s) in 9 museums.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	76.7	16.7	15.0(9)	3.3(2)
Registrar	63.3	15.0	6.7(4)	3.3(2)
Conservator	15.0	10.0	1.7(1)	1.7(1)
Conservation Scientist	5.0	-	-	-
Conservation Technician	15.0	6.7	1.7(1)	3.3(2)
Security	31.7	35.0	3.3(2)	3.3(2)
Building Maintenace	65.0	50.0	8.3(5)	6.7(4)

Table 17

Staff Analysis for Historic Sites

Numbers reflect percentages of museums responding and are based on the responses of 26 historic sites with budgets over $50,000. Under vacant positions, the numbers in parenthesis refer to actual numbers of positions that are reported to be vacant. For example, 7.7% of these 26 historic sites report vacancies for full-time curators. This represents vacant position(s) in 2 historic museums.

	Filled Positions		Vacant Positions	
	Full Time	Part Time	Full Time	Part Time
Curator	57.7	19.2	7.7(2)	11.5(3)
Registrar	42.3	15.4	7.7(2)	11.5(3)
Conservator	3.8	-	7.7(2)	7.7(2)
Conservation Scientist	-	3.8	-	-
Conservation Technician	26.9	7.7	-	-
Security	19.2	23.1	3.8(1)	7.7(2)
Building Maintenance	50.0	46.2	23.1(6)	7.7(2)

Table 18

Staff Analysis for Natural History Museums

Numbers reflect percentages of museums responding and are based on the responses of 28 natural history museums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 7.1% of these 28 natural history museums report vacancies for full-time curators. This represents vacant position(s) in 2 natural history museums.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	82.1	42.9	7.1(2)	-
Registrar	69.9	25.0	-	-
Conservator	17.9	-	3.6(1)	-
Conservation Scientist	21.4	7.1	3.6(1)	-
Conservation Technician	32.1	14.3	-	3.6(1)
Security	46.4	28.6	-	-
Building Maintenance	67.9	29.3	-	-

Table 19

Staff Analysis for Planetariums

Numbers reflect percentages of museums responding and are based on the responses of 7 planetariums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 14.3% of these 7 planetariums report vacancies for full-time registrars. This represents vacant position(s) in 1 planetarium.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	57.1	14.3	-	-
Registrar	14.3	14.3	14.3(1)	-
Conservator	28.6	-	-	-
Conservation Scientist	-	-	-	-
Conservation Technician	28.6	28.6	14.3(1)	-
Security	14.3	14.3	-	14.3(1)
Building Maintenance	28.6	14.3	-	14.3(1)

Table 20

Staff Analysis for Science Museums

Numbers reflect percentages of museums responding and are based on the responses of 19 science museums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 15.8% of these 19 science museums report vacancies for full-time curators. This represents vacant positions in 16 museums.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	84.2	31.6	15.8(16)	5.3(1)
Registrar	52.6	21.1	15.8(16)	-
Conservator	15.7	10.5	10.5(2)	5.3(1)
Conservation Scientist	26.3	-	10.5(2)	5.3(1)
Conservation Technician	21.1	-	-	-
Security	42.1	10.5	5.3(1)	-
Building Maintenance	68.4	26.3	21.1(4)	-

Table 21

Staff Analysis for Zoological Parks and Aquariums

Numbers reflect percentages of museums responding and are based on the responses of 38 zoological parks/aquariums with budgets over $50,000. Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 10.5% of these 38 zoological parks/aquariums report vacancies for full-time curators. This represents vacant positions in 4 museums.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	92.1	2.6	10.5(4)	-
Registrar	63.2	18.4	5.3(2)	-
Conservator	47.4	15.8	2.6(1)	-
Conservation Scientist	39.5	13.2	2.6(1)	-
Conservation Technician	89.5	44.7	26.3(10)	2.6(1)
Security	52.6	39.5	5.3(2)	-
Building Maintenance	84.2	52.6	13.2(5)	2.6(1)

Table 22

Staff Analysis for Other Types of Museums

Twenty-two museums did not identify clearly with the ten types of museums listed on the questionnaire. Consequently, these museums are categorized as "other types of museums". Numbers reflect percentages of museums responding and are based on the responses of 22 "Other Museums". Under vacant positions, the numbers in parentheses refer to actual numbers of respondents reporting vacancies. For example, 4.5% of these other museums report vacancies for part-time registrars. This represents a vacant position(s) in 1 museum.

	Filled Positions (%)		Vacant Positions (%)	
	Full Time	Part Time	Full Time	Part Time
Curator	90.9	27.3	-	-
Registrar	72.7	27.3	-	4.5(1)
Conservator	18.2	-	-	-
Conservation Scientist	31.8	18.2	4.5(1)	-
Conservation Technician	50.0	13.6	-	4.5(1)
Security	40.9	36.4	-	-
Building Maintenance	86.4	22.7	4.5(1)	-

Table 23 - Equipment Budget (In Percentages)

Expenditure	1	2	3	4	5	6	7
Total	31	36	2	8	12	8	4
Art	30	31		5	15	13	6
50-100K	19	41		5	15	16	4
100-500K	33	29		4	7	20	7
500K-3M	27	32	1	4	22	10	4
3M+	33	28	1	9	19	4	6
Botanical	38	35	2	11	5	3	7
50-100K	49	10			11	5	24
100-500K	46	30	3	9	2	3	7
500K-3M	21	55	2	16	5		1
3M+	48	22	1	15	6	5	2
Children	27	33		2	17	15	6
50-100K	4	63	1		2	30	
100-500K	36	23			36		
500K-3M	38			3	20	20	20
3M+	42	42		9	3	2	2
General	22	52	5	5	7	3	5
50-100K	31	50	7	9			2
100-500K	17	59	2	8	9	2	4
500K-3M	23	45	8	3	9	6	7
3M+	22	67		6	1	1	3
History	29	39	3	8	13	4	4
50-100K	24	38	3	11	21	2	10
100-500K	28	43	3	8	11	5	2
500K-3M	33	46	1	3	9	6	2
3M+	26	20	6	13	21	5	8
Hist. Site	47	39		3	6	4	1
50-100K	32	45		4	13	5	1
100-500K	50	35		4	5	5	1
500K-3M	47	45			2	3	2
Nat. Hist.	27	28	2	8	15	16	3
50-100K	39	28			11	19	3
100-500K	26	40		4	9	17	4
500K-3M	21	14	5	18	29	11	3
3M+	35	34	1	2	4	20	3
Planetaria	4	37	6	6	20	20	6
50-100K					32	61	6
100-500K	10	27	13	14	25	6	6
500K-3M	2	64	3		10	15	5
Science	40	33	2	8	5	11	
50-100K			9	73		18	
100-500K	26	33		6	11	23	
500K-3M	49	36	2	2	3	7	
3M+	54	41			4		
Zoo/Aqua	33	30	1	15	15	4	1
100-500K	28	32	1	15	14	10	1
500K-3M	40	29	1	14	12	1	3
3M+	25	32	1	15	23	3	

1 = buildings and grounds; 2 = heating and cooling; 3 = computerization of collection; 4 = conservation, 5 = curatorial; 6 = preparation; 7 = registration.

Table 24 - Personnel Budget

Expenditure	1	2	3	4	5	6	7
Total	35	3	1	7	33	9	11
Art	25	5		4	36	13	16
50-100K	14			3	39	5	39
100-500K	27	6		2	30	17	17
500K-3M	24	7		3	40	12	13
3M+	35	2		10	36	9	7
Botanical	61	2	1	18	13	3	2
50-100K	51				32	13	5
100-500K	73	3		11	10	1	1
500K-3M	50		2	35	11		2
3M+	68	6		14	7	3	2
Children	27	4	2	2	41	13	11
50-100K	15				19	45	17
100-500K	30			1	69		
500K-3M	31			4	36	4	25
3M+	35	35	3	6	12	4	4
General	36	2	1	10	31	8	13
50-100K	37		1	7	37	6	11
100-500K	45			17	20	2	16
500K-3M	26	4	2	4	39	13	12
3M+	54			17	18	5	7
History	33	1	2	5	37	9	15
50-100K	42		3		39	3	13
100-500K	32		2	4	38	9	15
500K-3M	28	1		7	34	13	16
3M+	33	1	2	17	31	6	11
Hist. Site	57	2		2	20	7	12
50-100K	15			8	46	6	24
100-500K	66	2		1	13	7	11
500K-3M	67	2			22	5	4
Nat. History	28		2	6	45	11	7
50-100K	26				55	18	2
100-500K	41		3	1	45	3	6
500-3M	19		1	16	40	15	8
3M+	22	6		2	47	15	7
Planetaria	25	6	8	8	33	17	23
50-100K					100		
100-500K	32		16	19	13	20	
500K-3M	31	16	3		20	23	6
Science	35	4	3	14	21	15	8
50-100K			6	57	24		13
100-500K	19			26	23	29	3
500K-3M	36	6	4	7	20	15	12
3M+	70	7			20	1	2
Zoo/Aqua	31	2	1	21	36	3	5
100-500K	16	1		17	53	5	7
500K-3M	37	2	2	25	25	2	7
3M+	41	2	2	19	33	2	1

1 = buildings and grounds; 2 = heating and cooling; 3 = computerization of collections; 4 = conservation; 5 = curatorial; 6 = preparation; 7 = registration.

Table 25
Conservation Funds Increased, Decreased, Remained the Same by Museum Type and Budget Level (Percentages)

	Increased	Decreased	Same	Number of Museums
Art	41	16	43	57
50-100K	0	17	83	6
100-500K	36	24	40	25
500K-3M	35	12	53	17
3M+	82	0	18	9
Botanical	29	32	39	28
50-100K	25	25	50	7
100-500K	31	31	38	13
500K-3M	22	44	33	9
3M+	50	0	50	2
Children	11	11	88	9
50-100K	0	50	50	2
100-500K	25	0	75	4
500K-3M	0	0	100	1
3M+	0	0	100	2
General	44	15	41	27
50-100K	33	0	67	3
100-500K	44	33	22	7
500K-3M	54	0	46	13
3M+	0	50	50	2
History	53	14	33	58
50-100K	42	25	33	12
100-500K	56	4	40	25
500K-3M	56	19	25	16
3M+	60	20	20	5
Hist. Site	56	26	19	27
50-100K	40	40	20	5
100-500K	59	24	18	17
500K-3M	60	20	20	5
Nat. Hist.	29	33	38	24
50-100K	0	33	67	3
100-500K	27	46	27	11
500K-3M	50	25	25	8
3M+	33	0	67	3
Planetariums	20	60	20	5
50-100K	0	100	0	1
100-500K	25	50	25	4
Science	50	19	31	16
50-100K	0	50	50	2
100-500K	20	20	60	5
500K-3M	100	0	0	6
3M+	33	33	33	3
Zoo/Aqua	57	11	32	37
100-500K	31	15	54	13
500K-3M	63	13	25	16
3M+	88	0	12	8
All museums	44	19	36	289

Table 26
Percentage of Museums Receiving Funds Specifically Designated for Conservation by Museum Type and Budget Level

	Yes	No	No. Response
Art	63	37	61
50-100K	17	83	6
100-500K	8	92	26
500K-3M	45	55	20
3M+	33	67	9
Botanical	32	68	28
50-100K	25	75	4
100-500K	8	82	13
500K-3M	44	56	9
3M+	50	50	2
Children	27	73	11
50-100K	0	100	4
100-500K	25	75	4
500K-3M	50	50	2
3M+	0	100	1
General	52	48	27
50-100K	0	100	3
100-500K	22	78	9
500K-3M	62	38	13
3M+	50	50	2
History	57	43	60
50-100K	15	85	13
100-500K	37	63	27
500K-3M	53	47	15
3M+	60	40	5
Hist. Site	46	54	27
50-100K	40	60	5
100-500K	24	76	17
500K-3M	40	60	5
Nat. Hist.	39	61	28
50-100K	0	100	3
100-500K	33	67	12
500K-3M	44	56	9
3M+	75	25	4
Planetaria	20	80	5
50-100K	0	100	1
100-500K	25	75	4
Science	44	56	17
50-100K	0	100	2
100-500K	0	100	4
500K-3M	25	75	8
3M+	33	67	3
Zoo/Aqua	44	56	39
100-500K	29	71	14
500K-3M	24	76	17
3M+	25	75	8
All museums	49	51	303

Table 27
Percentage of Museums Receiving Funds Specifically Designated for Collections (Records) Management by Museum Type and Budget Level

	Yes	No	No. Response
Art	23	77	61
50-100K	17	83	6
100-500K	8	92	26
500K-3M	45	55	20
3M+	33	67	9
Botanical	25	75	28
50-100K	25	75	4
100-500K	8	92	13
500K-3M	44	56	9
3M+	50	50	2
Children	18	82	11
50-100K	0	100	4
100-500K	25	75	4
500K-3M	50	50	2
3M+	0	100	1
General	41	59	27
50-100K	0	100	3
100-500K	22	78	9
500K-3M	62	38	13
3M+	50	50	2
History	38	62	60
50-100K	15	85	13
100-500K	37	63	27
500K-3M	53	47	15
3M+	50	40	5
Hist. Site	30	70	27
50-100K	40	60	5
100-500K	24	76	17
500K-3M	40	60	5
Nat. Hist.	43	57	28
50-100K	0	100	3
100-500K	33	67	12
500K-3M	44	56	9
3M+	75	25	4
Planetaria	20	80	5
50-100K	0	100	1
100-500K	25	75	4
Science	18	82	17
50-100K	0	100	2
100-500K	0	100	4
500K-3M	25	75	8
3M+	33	67	3
Zoo/Aqua	26	74	39
100-500K	29	71	14
500K-3M	24	76	17
3M+	25	75	8
All museums	30%	70%	303

Table 28 - Reported Funds from Federal Sources for Conservation

M = Millions; K = Thousands

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	1.8M	2.0M	1.0M	1.7M	3.9M
Art	208.0K	354.0K	150.0K	283.0K	683.0K
Botanical	4.0K	8.0K	4.0K	34.0K	4.0K
General			20.0K	22.0K	479.0K
History	887.0K	968.0K	564.0K	74.0K	1.2M
Hist Site		100.0K	110.0K	191.0K	440.0K
Nat. Hist	375.0K	383.0K	44.0K	800.0K	339.0K
Science	246.0K	200.0K	100.0K	233.0K	35.0K
Zoo/Aqua	32.0K	25.0K	92.0K	95.0K	661.0K
Totals	3.5M	4.0M	2.0M	3.4M	7.7M

Table 29
Reported Funds from Federal Sources for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	1.6M	2.2M	2.7M	2.2M	1.3M
Art		10.0K	55.0K	84.0K	80.0K
Botanical	2.0K			40.0K	1.0K
Children	40.0K		10.0K	10.0K	90.0K
General	498.0K	529.0K	539.0K	34.0K	
History	394.0K	377.0K	871.0K	525.0K	533.0K
Hist. Site		143.0K	29.0K	101.0K	85.0K
Nat. Hist.	691.0K	1.1M	1.2M	1.4M	434.0K
Science				33.0K	35.0K
Zoo/Aqua			.5K		
Totals	3.2M	4.3M	5.4M	4.4M	2.5M

Table 30
Reported Funds from Private Foundations for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	227.0K	549.0K	673.0K	1.1M	469.0K
Art	42.0K	392.0K	192.0K	267.0K	249.0K
Botanical	24.0K	27.0K	28.0K	7.0K	11.0K
General	10.0K	10.0K	10.0K	38.0K	55.0K
History	54.0K	40.0K	337.0K	610.0K	16.0K
Hist. Site	71.0K	3.0K			40.0K
Nat. Hist.					
Planetaria			10.0K	10.0K	10.0K
Science	1.0K	.5K	.2K	.3K	3.0K
Zoo/Aqua	25.0K	77.0K	96.0K	142.0K	85.0K
Totals	454.0K	1.0M	1.3M	2.1M	938.0K

Table 31
Reported Funds from Private Foundations for Collections Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	687.0K	63.0K	69.0K	172.0K	328.0K
Art	45.0K	50.0K	45.0K	91.0K	143.0K
Botanical	3.0K	2.0K	2.0K	2.0K	2.0K
History	39.0K	11.0K		44.0K	68.0K
Hist. Site			5.0K		
Nat. Hist.			18.0K	35.0K	35.0K
Planetaria					80.0K
Zoo/Aqua	600.0K				
Totals	1.3M	126.0K	139.0K	344.0K	656.0K

Table 32
Reported Funds from Corporations for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	108.0K	107.0K	266.0K	59.0K	68.0K 10
Art			22.0K	---- ----	-----------
General		1.0K			
History	4.0K	10.0K	61.0K	33.0K	62.0K
Hist. Site	71.0K	.4K			50.0K
Science	.5K	95.0K			
Zoo/Aqua	34.0K		182.0K	26.0K	569.0K
Totals	217.5K	213.4K	531.0K	118.0K	749.0K

Botanical Gardens, Children's, Natural History, and Planetaria reported no funds.

Table 33
Reported Funds from Corporations for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	85.0K	36.0K	30.0K	40.0K	171.0K
Art	50.0K	20.0K	10.0K	20.0K	44.0K
Children			20.0K		63.0K
History	50.0K	11.0K			10.0K
Hist. Site					
Nat. Hist.		5.0K			
Zoo/Aqua				20.0K	54.0K
Totals	185.0K	72.0K	60.K	60.0K	342.0K

Botanical, General, Historic Site, Planetaria and Science museums reported no funds.

Table 34
Reported Funds from Individuals and Local Private Support Groups for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	774.0K	1.4M	1.7M	3.0M	2.0M
Art	112.0K	69.0K	141.0K	142.0K	119.0K
Botanical		39.0K	37.0K	84.0K	111.0K
History	300.0K	118.0K	156.0K	163.0K	149.0K
Hist. Site	95.0K	25.0K	53.0K	52.0K	48.0K
Science	50.0K	38.0K	50.0K	50.0K	
Zoo/Aqua	206.0K	1.1M	1.3M	2.4M	

Children's, Natural History and Planetaria reported no funds.

Table 35
Reported Funds from Individuals and Local Private Support Groups for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	1.2M	115.0K	800.0K	114.0K	110.0K
Art	38.0K	12.0K	760.0K	94.0K	29.0K
General					10.0K
History	18.0K	103.0K		20.0K	31.0K
Hist. Site			40.0K		
Zoo/Aqua	1.1M				40.0K

Botanical Gardens, Children's, Natural History, Planetaria and Science museums reported no funds.

Table 36
Reported Public Funds from States for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	2.0M	2.3M	5.0M	3.9M	3.7M
Art	492.0K	527.0K	457.0K	1.1M	1.5M
Botanical	11.0K	170.0K	42.0K	20.0K	15.0K
General					30.0K
History	375.0K	654.0K	2.1M	175.0K	1.5M
Hist. Site	600.0K	600.0K	200.0K	1.3M	418.0K
Nat. Hist.	170.0K	500.0K	324.0K		
Science		625.0K			
Zoo/Aqua	315.0K	380.0K	1.1M	954.0K	289.0K

Children's museums and Planetaria reported no funds.

Table 37
Reported Public Funds from States for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	983.0K	609.0K	860.0K	1.1M	2.6M
Art			540.0K	786.0K	1.7M
Botanical	8.0K	9.0K		30.0K	
General					470.0K
History	975.0K	300.0K	280.0K	50.0K	378.0K
Hist. Site			40.0K	250.0K	118.0K
Nat. Hist.				6.0K	
Planetaria		300.0K			

Children's, Science and Zoo/Aqua reported no funds.

Table 38
Reported Local Public Funds for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	999.0K	1.9M	2.1M	2.6M	2.8M
Art	200.0K	200.0K	200.0K	20.0K	200.0K
Botanical	353.0K	395.0K	423.0K	511.0K	523.0K
History	446.0K	1.0M	1.1M	1.2M	1.2M
Zoo/Aqua		276.0K	400.0K	912.0K	957.0K

Children's, General, Historic Sites, Natural History, Planetaria and Sci;ence museums reported no funds.

Table 39
Museums Reporting Local Public Funds for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	621.0K	754.0K	834.0K	1.0M	865.0K
Art	100.0K	10.0K	10.0K	100.0K	100.0K
History	521.0K	744.0K	824.0K	731.0K	765.0K
Nat. Hist.				185.0K	

Table 40
Reported Funds from Other Sources for Conservation

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	2.2M	2.2M	1.9M	2.2M	2.4M
Art	628.0K	887.0K	650.0K	156.0K	310.0K
Botanical					5.0K
History	173.0K	264.0K	250.0K	1.0M	840.0K
Hist. Site	199.0K	15.0K	19.0K	65.0K	65.0K
Nat. Hist.	10.0K	10.0K	10.0K	10.0K	10.0K
Science	13.0K	13.0K	8.0K		
Zoo/Aqua	1.1M	1.0M	1.0M	1.0M	1.4M

Children's, General and Planetaria reported no funds.

Table 41
Reported Funds From Other Sources for Collection Management

	1979 Amount	1980 Amount	1981 Amount	1982 Amount	1983 Amount
Total	1.9M	2.3M	1.8M	1.9M	2.3M
Art	220.0K	220.0K	220.0K	220.0K	220.0K
Children	460.0K	700.0K	600.0K	120.0K	780.0K
History	790.0K	1.3M	950.0K	1.3M	1.1M
Hist. Site	422.0K	30.0K	15.0K	83.0K	65.0K
Science	13.0K	13.0K	8.0K		
Zoo/Aqua			10.0K	150.0K	150.0K

Botanical Gardens, General, Natural History and Planetaria reported no funds.

Table 42

Percentage of Museums Ranking the Six Most Important Collection Care and Management Activities for the Next Decade

Rank	1	2	3	4	5	6
Registration of collections	7	4	5	4	3	3
Cataloging of collections	7	11	9	6	5	4
Computerization of inventory and catalog data	12	12	14	12	11	15
Develop adequate storage space	23	16	14	9	7	3
Develop adequate security	3	4	5	6	6	7
Upgrade climate control	9	12	10	7	9	7
Conservation of collections	17	17	15	15	8	9
Education of museum personnel	2	4	8	8	13	8
Education of trustees	4	4	6	9	8	8
Education of general public	7	5	3	4	9	9
Examination of collection condition	4	7	6	9	7	7
Obtain conservator/veterinarian horticulturalist on staff	4	3	2	8	4	6
Upgrade laboratory equipment	1	2	2	4	8	7

This table is based on responses from 244 museums for which this item was completed.

APPENDIX B

Sampling Methodology for AAM Museum Collection Survey

The overall goal of the sampling design is to assure an adequate level of accuracy for statistical estimates for each of the ten museum types. For each type of museum, the sampling error of any mean would be given by:

$$SV = \frac{(T-N)}{(T-1)} \times \frac{V}{N}$$

where SV is the sampling variance of the mean, T the total number of museums in the population, N the number of museums in the sample, and V the variance of the variable (across museums) for which the mean is being estimated.

We will be 95% confident that the difference between the true mean and our estimate will be less than 1.96 times the standard error (the square rokot of the sampling variance). While it is not possible to calculate the size of such confidence bounds before the variances of the variables in question are known, it is common to require that the 95% confidence bounds be less than .25 standard deviations. Using the above formula, this level of accuracy can be achieved for each of the types of museums with a combined sample of 400 distributed as shown in Table 1.

The above become upper bound estimates of sampling errors when further stratification is introduced to reduce sampling variation on important dimensions. Our sampling plan includes such further stratification. For each tupe of museum, we will divide all of the known museums into three equal-sized groups based on their budget size. We will draw the same proportion of cases from each of these three strata. Further, within each budget stratum, the museums will be sorted by zip code and selected systematically, taking every kth museum, where k is the inverse of the sampling ratio. The systematic sampling by zip code will insure an even distribution of the selected museum by region and by locality within region.

The actual reliability of estimates will also be affected by problems of nonresponse. We will use a combination of mail and telephone follow-ups in an effort to get a maximum number of returns. (An earlier 1979 museum survey obtained a 94% response rate, following these procedures.) To partially correct for nonresponse problems, phone contact with remaining nonresponse museums will be made in an effort to identify them on selected salient characteristics. They can then be matched with museums that responded with similar characteristics to determine if weight adjustments for missing data are appropriate, based on an estimate of the degree of bias due to nonresponse and to systematic under- or overreporting.

American Institute for Research
May 7, 1984

SAMPLING AND RESPONSE RATE STATISTICS BY TYPE AND BUDGET *
(NP - EST POP N, NS - NO. SAMPLED, NR - NO. RESPONDING)
(SEM - SE OF MEANS IN S.D. UNITS, SEP MAX SE OF A %)

MCAT=1. ART

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	140	33	15	23.6	45.5	10.7	50	6	12.0	0.39	0.19
2. 100K-499K	206	51	27	24.8	52.9	13.1	192	26	13.5	0.18	0.09
3. 500K-2999K	58	7	5	12.1	71.4	8.6	164	20	12.2	0.21	0.11
4. 3Mill +	18	16	8	88.9	50.0	44.4	39	9	23.1	0.30	0.15
TOTAL ALL BUDGET GROUPS	422	107	55	25.4	51.4	13.0	445	61	13.7	0.12	0.06

MCAT=2. BOTANICAL

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	16	10	4	62.5	40.0	25.0	3	2	66.7	0.50	0.25
2. 100K-499K	62	47	9	75.8	19.1	14.5	59	14	23.7	0.24	0.12
3. 500K-2999K	17	9	15	52.9	166.7	88.2	33	8	24.2	0.31	0.16
4. 3Mill +	2	2	0	100.0	0.0	0.0	3	2	66.7	0.50	0.25
TOTAL ALL BUDGET GROUPS	97	68	28	70.1	41.2	28.9	98	26	26.5	0.17	0.08

MCAT=3. CHILDRENS

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	18	15	4	83.3	26.7	22.2	12	3	25.0	0.52	0.26
2. 100K-499K	13	7	5	53.8	71.4	38.5	14	4	28.6	0.44	0.22
3. 500K-2999K	4	3	3	75.0	100.0	75.0	6	3	50.0	0.45	0.22
4. 3Mill +	1	1	0	100.0	0.0	0.0	2	1	50.0	1.00	0.50
TOTAL ALL BUDGET GROUPS	36	26	12	72.2	46.2	33.3	34	11	32.4	0.25	0.13

MCAT=4. GENERAL

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	49	17	10	34.7	58.8	20.4	15	3	20.0	0.53	0.27
2. 100K-499K	69	33	15	47.8	45.5	21.7	39	8	20.5	0.32	0.16
3. 500K-2999K	21	15	11	71.4	73.3	52.4	45	13	28.9	0.24	0.12
4. 3Mill +	2	1	1	50.0	100.0	50.0	7	2	28.6	0.65	0.32
TOTAL ALL BUDGET GROUPS	141	66	37	46.8	56.1	26.2	106	26	24.5	0.17	0.09

MCAT=5. HISTORY

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	241	51	31	21.2	60.8	12.9	111	13	11.7	0.26	0.13
2. 100K-499K	145	35	19	24.1	54.3	13.1	228	25	11.0	0.19	0.09
3. 500K-2999K	35	7	4	20.0	57.1	11.4	100	15	15.0	0.24	0.12
4. 3Mill +	7	6	5	85.7	83.3	71.4	14	5	35.7	0.37	0.19
TOTAL ALL BUDGET GROUPS	428	99	59	23.1	59.6	13.8	453	58	12.8	0.12	0.06

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* Key is presented at end of tables.

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                 SAMPLING AND RESPONSE RATE STATISTICS BY TYPE AND BUDGET
                 (NP - EST POP N,  NS - NO. SAMPLED,  NR - NO. RESPONDING)
                   (SEM - SE OF MEANS IN S.D. UNITS, SEP MAX SE OF A %)

---------------------------------------------------- MCAT=6. HHIST SITE ---------------------------------------------------

     BCAT                        NP78     NS78     NR78      SR78      RR78     PCT78     NP84     NR84    PCT84     SEM      SEP

     1.  35K-99K                  189       45       12      23.8      26.7       6.3       62        4      6.5    0.49     0.24
     2.  100K-499K                111       31       13      27.9      41.9      11.7      189       15      7.9    0.25     0.12
     3.  500K-2999K                29        8        4      27.6      50.0      13.8       35        4     11.4    0.48     0.24
     4.  3Mill +                    2        2        0     100.0       0.0       0.0        0        0       .       .        .
     TOTAL ALL BUDGET GROUPS      331       86       29      26.0      33.7       8.8      286       23      8.0    0.20     0.10

---------------------------------------------------- MCAT=7. NAT HISTORY --------------------------------------------------

    BCAT                         NP78     NS78     NR78      SR78      RR78     PCT78     NP84     NR84    PCT84     SEM      SEP

    1.  35K-99K                    65       30        9      46.2      30.0      13.8       23        2      8.7    0.69     0.35
    2.  100K-499K                  65       26       11      40.0      42.3      16.9       84       10     11.9    0.30     0.15
    3.  500K-2999K                 14        9        9      64.3     100.0      64.3       31        9     29.0    0.29     0.14
    4.  3Mill +                     4        4        1     100.0      25.0      25.0        6        3     50.0    0.45     0.22
    TOTAL ALL BUDGET GROUPS       148       69       30      46.6      43.5      20.3      144       24     16.7    0.19     0.09

---------------------------------------------------- MCAT=8. PLANETARIA ---------------------------------------------------

     BCAT                        NP78     NS78     NR78      SR78      RR78     PCT78     NP84     NR84    PCT84     SEM      SEP

     1.  35K-99K                   13        9        1      69.2      11.1       7.7        0        0       .       .        .
     2.  100K-499K                 18       15        8      83.3      53.3      44.4       18        4     22.2    0.45     0.23
     3.  500K-2999K                 4        2        1      50.0      50.0      25.0        9        2     22.2    0.66     0.33
     4.  3Mill +                    0        0        0        .         .         .         0        0       .       .        .
     TOTAL ALL BUDGET GROUPS       35       26       10      74.3      38.5      28.6       27        6     22.2    0.37     0.18

---------------------------------------------------- MCAT=9. SCIENCE ------------------------------------------------------

     BCAT                        NP78     NS78     NR78      SR78      RR78     PCT78     NP84     NR84    PCT84     SEM      SEP

     1.  35K-99K                   53       27        3      50.9      11.1       5.7       60        3      5.0    0.57     0.28
     2.  100K-499K                194       41        8      21.1      19.5       4.1       29        5     17.2    0.41     0.21
     3.  500K-2999K                19       14        4      73.7      28.6      21.1      111        7      6.3    0.37     0.18
     4.  3Mill +                    6        2        1      33.3      50.0      16.7        6        2     33.3    0.63     0.32
     TOTAL ALL BUDGET GROUPS      272       84       16      30.9      19.0       5.9      206       17      8.3    0.23     0.12

---------------------------------------------------- MCAT=10. ZOO/AQUARIA -------------------------------------------------

     BCAT                        NP78     NS78     NR78      SR78      RR78     PCT78     NP84     NR84    PCT84     SEM      SEP

     1.  35K-99K                   29       13        7      44.8      53.8      24.1        0        0       .       .        .
     2.  100K-499K                 69       36       16      52.2      44.4      23.2       63       12     19.0    0.26     0.13
     3.  500K-2999K                49       27       10      55.1      37.0      20.4       69       14     20.3    0.24     0.12
     4.  3Mill +                   10        9        7      90.0      77.8      70.0       15        8     53.3    0.25     0.13
     TOTAL ALL BUDGET GROUPS      157       85       40      54.1      47.1      25.5      147       34     23.1    0.15     0.08
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SAMPLING AND RESPONSE RATE S...ııSTICS BY TYPE AND BUDGET
(NP - EST POP N, NS - NO. SAMPLED, NR - NO. RESPONDING)
(SEM - SE OF MEANS IN S.D. UNITS, SEP MAX SE OF A %)

MCAT=11. OTHER

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	7	0	5	0.0	.	71.4	5	1	20.0	1.00	0.50
2. 100K-499K	5	0	5	0.0	.	100.0	81	11	13.6	0.28	0.14
3. 500K-2999K	1	0	2	0.0	.	200.0	15	4	26.7	0.44	0.22
4. 3Mill +	0	0	1	.	.	.	10	4	40.0	0.41	0.20
TOTAL ALL BUDGET GROUPS	13	0	13	0.0	.	100.0	111	20	18.0	0.20	0.10

MCAT=ALL TYPES

BCAT	NP78	NS78	NR78	SR78	RR78	PCT78	NP84	NR84	PCT84	SEM	SEP
1. 35K-99K	820	250	101	30.5	40.4	12.3	340	37	10.9	0.16	0.08
2. 100K-499K	957	322	136	33.6	42.2	14.2	996	134	13.5	0.08	0.04
3. 500K-2999K	251	101	68	40.2	67.3	27.1	618	99	16.0	0.09	0.05
4. 3Mill +	52	43	24	82.7	55.8	46.2	102	36	35.3	0.13	0.07
TOTAL ALL BUDGET GROUPS	2080	716	329	34.4	45.9	15.8	2056	306	14.9	0.05	0.03

* Key: Explanation of Column Headings

NP78 - 1978 population size
NS78 - Number sampled in category, 1978 values
NR78 - Number responding, 1978 values
SR78 - Sampling percentage, 1978 values
RR78 - Response rate (among sampled museums), 1978 values

NP84 - Estimated 1984 population, by 1984 values (type and size)
NR84 - Number responding, by 1984 values
PCT84- Percentage responding, 1984 values
SEM - S.E. of a mean in S.D. units, 1984 values
SEP - Maximum S.E. of a percentage, 1984 values

APPENDIX C

Calendar of AAM Survey Activities

Fall 1983	Planning stage with NIC, AIC, and IMS.
February 1984	Contract signed. Project advisory committee meeting. Staff consultations with representatives of museum service organizations and professionals, and with the American Institutes for Research, consultant to the project.
March 1984	Pretest of survey instrument. Development of supplementary forms.
April 1984	Submission of questionnaire to Office of Management and Budget through the Institute of Museum Services.
June 1984	Negotiations with OMB for clearance of survey instrument. Resubmission of questionnaire to OMB.
July 1984	Clearance received from OMB. Preliminary letter sent to sample introducing museums to project. Questionnaires mailed to sample.
August 1984	Original deadline and extended deadline; follow-up telephone calls and letters.
September 1984	Continued follow-up. Survey closed.
October 1984	Analysis of data by consultants.
November 1984	Analysis continued.
December 1984	Completion of draft of report
January 1985	Final project advisory committee.
March 1985	AAM's participation in meeting of Museum Services Board.
June 1985	Submission of report to Institute of Museum Services

OMB No: 3137-0008
Exp. 10/31/84

American
Association
of
Museums

Museum Conservation Questionnaire
1984

Survey of Collections and Conservation Needs of the Museum Community

Mail Completed Form To:
Lisa David
American Association of Museums
1055 Thomas Jefferson St., NW
Washington, DC 20007

Museum Conservation Survey Instructions

For the purposes of this study, a museum is an institution organized on a permanent basis for essentially educational or aesthetic purposes, which utilizes a staff, owns or uses tangible objects, whether animate or inanimate, cares for these objects and exhibits them to the public on a regular basis.

The survey is designed to assess current collections care in museums. Questions ask for information about physical facilities, finances, conservation, collections (records) management and your activities in these areas.

It is important that you follow a few simple rules in completing this form:

1) The survey is being sent to museums of all types: art, history, general, natural history, as well as children's, science, planetariums, arboretums and zoos. Not all questions are applicable to every museum. Please read every question and enter "N/A" if an item does not apply to your museum.

2) Enter "0" if the appropriate entry for an item is "zero" or "none".

3) If an exact figure is not available for a particular item, but you know that the amount is greater than zero, enter an estimate of the amount and indicate that the figure is an estimate by parentheses. Estimates are important if exact data is not available.

4) Refer to the glossary on the next page for definitions before you begin to answer. We may be using a slightly different meaning for some of the terms that you are used to. In such cases, please use our definitions.

5) If your institution is a zoo, botanical garden, arboreta or aquarium, there are additional questions to answer at the end of the form. Instructions are included within the instrument to clarify the definition of conservation for living collections. For living collections, conservation is broadly defined as activities undertaken to assure the continuation of the collections, species or populations, beyond the survival of individual animals or plants in the museum. It includes the long-term activities to preserve endangered and threatened species or populations.

6) If you have any questions, please call Lisa David or Susan Bandes at the AAM, (202) 338-5300.

7) Please return the completed questionnaire by August 8,1984.

Glossary

Buildings and maintenance staff -- includes the superintendant, engineers, mechanics and electricians, groundkeepers and workshop personnel.

Catalogue -- is the full description of an object, including but not limited to inventory data. A catalogue entry may include exhibition, information, provenance, donor and insurance records.

Collections Maintenance -- involves providing safe environments for museum collections, including proper light, temperature and humidity levels, fire and burglar systems, monitored exhibition and storage facilities, and security.

Collections Management --is the record keeping for museum collections, including inventories, registration, cataloguing, photographing, and other archival information.

Conservation -- includes all actions needed to protect, preserve and maintain the condition and integrity of objects or structures which, because of their history, significance, rarity or workmanship have a commonly accepted value and importance for the public interest. The term "conservation" encompasses examination, restoration and preservation. In living collections it is defined not only as the planned management of natural resources, the preservation of objects in the collection, but also the preservation of endangered and threatened species, including breeding programs.

Conservation Scientist -- a scientific specialist involved in analytical research in one or more of the associated areas of conservation: examination, preservation and restoration. For living collections, a conservation scientist is a scientific specialist (botanist, geneticist, nutritionist, pathologist, plant physiologist, research scientist, behavioral/reproductive researcher) who conducts basic and applied scientific research in an area related to the long-term survival of the collections, species or populations.

Conservation Technician -- is an artisan trained in specialized skills but not in theoretical concepts of conservation nor in a broad range of material and techniques. For living collections, a conservation technician has specialized skills in assuring the long-term survival of collections such as a zookeeper or professional gardener, but is not trained in theoretical concepts.

Conservator -- is the specialist with advanced training in the arts and sciences relating to the theoretical and practical aspects of conservation who is capable of supervising, advising and carrying out the three functions of conservation For living collections, a conservator is a specialist with advanced training related to the survival of collections, such as a horticulturalist or veterinarian.

Curator -- is a specialist in the academic discipline relevant to the museum's collection. The curator is responsible for the care and interpretation of the objects, materials and specimens belonging or lent to the museum; recommendations for acquisitions, deaccessions, attributions and authenticity; and research on the collections and the resultant publications. For living collections, the curator may also serve conservation functions.

Inventory -- locates objects in a collection by recording the accession number, name of object and its precise location within the museum.

Preparator -- is a staff member who handles objects or specimens and prepares them for exhibition. The preparator has basic training in the proper handling of objects, often builds, installs and maintains exhibits but does not design them.

Registrar -- is responsible for creating, organizing and maintaining orderly forms, legal documents, files and retrieval systems associated with the following: acquisitions, accessioning, cataloging, loans, packing, shipping, inventory, insurance, storage and reproduction rights. For the purposes of this survey, registrars are understood to include collections managers, as well as plant recorders in botanical collections.

(Please Print)

I General Information

A. Name of Museum ______________________________

Address ______________________________
(Street)

____
(City, State, Zip)

Telephone Number (   ) ____________

B. Circle the type of museum that most nearly describes your institution's primary category (circle one)

1. Art
2. Botanical garden/arboretum
3. Children's
4. General
5. History
6. Historic Site(s)/House(s)
7. Natural History
8. Planetarium
9. Science
10. Zoo/Aquarium
11. Other, Specify ____________

II Physical Facilities

A. How many separate buildings do you have on and off-site, including storage facilities, in which any part of your collection(s) is housed? ____ (number)

B. What is the total square footage of the indoor space? ________
What is the total acreage of the outdoor space? ________

Instructions for Question C

C. In this question, indicate the function(s) that occurs in each building and the general state of repair of the area where the function is carried out. Then indicate whether or not the building has fire, burglar and climate control systems. If your institution has more than two buildings with different functions, photocopy the next page and attach the additional sheet(s) to the questionnaire.

For those museums such as ZOOS and HISTORICAL SITES with multiple buildings that serve the same functions, do not answer question C separately for each structure. Cite total number of buildings with same function and then indicate by number the buildings that meet the description, i.e., total number of buildings: 5; collections storage: excellent: 3; good: 2; fire alarm: 3; climate control: 2; burglar alarm: 0.
ZOOS should answer for all structures including exhibition and discrete animal buildings. BOTANICAL GARDENS should include greenhouses, conservatories, lath houses, cold frames, outdoor nursery areas, herbaria and other structures.

Excellent repair means that no repairs are needed. Good means that some routine repair is needed. Poor means that more than routine repairs are needed but not major repairs. Needs major repair means that the conditions pose a threat to the welfare of the objects. If a particular function does not apply, indicate this in "N/A" column.

Question

Fa y

State of Repair or dition of Area

Building Functions	Excellent (# of buildings)	Good (#)	Poor (#)	Needs Major Repair (#)	N/A (#)	Number of buildings that have the following: Fire Alarm System (#)	Climate Control (#)	Burglar Alarm System (#)
Answer applied to _____ (number) multiple structures								
1. Collection storage (include herbaria)								
2. Conservation lab/veterinary hospital/propagation and nursery facilities								
3. Exhibition space								
4. Field research station/ breeding farm								
5. Historic structure(s)/site(s)								
6. Preparation/holding, quarantine and animal food preparation areas								
7. Registration/records keeping area								
8. Services (shipping, equipment and supply storage, general maintenance)								
Building Functions								
Answer applied to _____ (number) multiple structures								
1. Collection storage (include herbaria)								
2. Conservation lab/veterinary hospital/propagation and nursery facilities								
3. Exhibition space								
4. Field research station/ breeding farm								
5. Historic structure(s)/site(s)								
6. Preparation/holding, quarantine and animal food preparation areas								
7. Registration/records keeping area								
8. Services (shipping, equipment and supply storage, general maintenance)								

D. 1. Has your facility been expanded? (circle one) 1. Yes; 2. No;
If yes, when?_____(year).

For botanical gardens and zoos have you added a new garden area or animal enclosure? (circle one) 1. Yes; 2. No; If yes, when? _____(year)

2. Has your institution undertaken major renovations that affect the conservation and environments of the collections? (circle one) 1. Yes: 2. No;
If yes, when? _____ (year)

E. Total size of overall staff (full- and part-time) ____________.

In the following specific areas, how many persons are employed? Enter "N/A" if not applica or "0" if none. Refer to the glossary for definitions. If one person has responsibility i more than one area, indicate the portion of time spent in each (ex. 1/2 as curator, 1/2 as registrar or 1/3 as gardener, 2/3 routine maintenance). Buildings and grounds staff refer t superintendants and their staffs, mechanics, engineers, groundskeepers, and workshop personnel. Indicate in parentheses the number of vacant positions in each area at the curre time.

Area of Responsibility	# of full-time (35 hours or more)	# of part-time	# of volunteers (regular or at least twice a month)	other (su as consul or inte
1. Curator	___( )	___( )	___	___(
2. Registrar/collections manager/plant recorder	___( )	___( )	___	___(
3. Conservator/veterinarian/ horticulturist	___( )	___( )	___	___(
4. Conservation scientist/ research scientist	___( )	___( )	___	___(
5. Conservation technician/ zookeeper/aquarist/ professional gardener	___( )	___( )	___	___(
6. Security (guards)	___( )	___( )	___	___(
7. Buildings and maintenance	___( )	___( )	___	___(

III Financial Information

A. Size of operating budget in fiscal year ending prior to January 1984 (include rent, personnel, security and maintenance). Exclude one-time capital expenditures. Universities and other museums that are part of larger organizations should include only that part of the budget specifically for the museum.

Total operating budget $______________

B. For the current fiscal year, what amount of the operating budget is allocated to the following specific areas (including staff salaries or consulting services). If salaries are not a line-item in budget, provide approximate amount of the salary of the individual responsible for function in this category. Exclude exceptional one-time capital expenditures for equipment an supplies. Enter "N/A" if not applicable. Botanical gardens include the cost of maintaining rare plant collections under "conservation" and costs for research on the collections under "curatorial".

	Cost of equipment and supplies	Personnel Costs
1. Buildings and grounds maintenance	$______	$______
2. Heating and cooling	$______	$______
3. Computerization of collections (include ISIS, inventories; exclude accounting or membership usage of computers)	$______	$______
4. Conservation/analytical/scientific research/breeding/veterinary programs	$______	$______
5. Curatorial	$______	$______
6. Preparation	$______	$______
7. Registration/records keeping	$______	$______

C. Taking into account inflation over the past five years, have funds for conservation at yo institution (circle one): 1. increased; 2. decreased; 3. stayed the same?

D. In the last five years, have you obtained funding specifically designated for conservation collections? (Zoos include breeding and field programs.)

(circle one) 1. Yes; 2. No

In the last five years, have you obtained funding specifically designated for collections (records) management?

(circle one) 1. Yes; 2. No

E. If you have answered "yes" to either of the above, indicate the source, amount, and purpose the funding (C indicates funds for conservation; CM indicates funds for collections (records management):

Funding Source and Purpose	1979 amount		1980 amount		1981 amount		1982 amount		1983 amount	
	C	CM	C	CM	C	CM	C	CM	C	C
1. Private foundations										
2. Corporations										
3. Individual contributions and local private support groups										
4. Federal agencies										
NEA										
NEH										
IMS										
NSF										
NMA										
Other (specify) ______										
5. State public funds- Specify______________:										
6. Local public funds- Specify______________:										
7. Other- Specify______________:										

Optional Information

F. If you answered III, E. 1 or 2, Financial Information, please list private foundations and corporations that have supported conservation or collection management projects in the last 10 years. Check if the funds were for conservation "C", or collections management "CM", or both. This information is for research purposes only and will not be used in any fund-raising efforts.

1. ____ C

____ CM

2. ____ C

____ CM

3. ____ C

____ CM

4. ____ C

____ CM

5. ____ C

____ CM

IV Conservation of Collections

A. Does the museum have a written long-range plan for conservation of collections? (Circle one
1. Yes; 2. No

For botanical gardens, does the museum have identified priorities for management of significant collections? (circle one) 1. Yes; 2. No

B. Circle the percentage of your collection(s) that has been surveyed for conservation purposes (Zoos should answer for surveys by veterinarians, not zookeepers.)

1. none; 2. 1-25%; 3. 26-50%; 4. 51-75%; 5. 76-100%

Date of latest survey ____________.

C. What is the approximate number of each type of object in your collection? (Enter 0 if there is none.) What is the current condition of the objects in each category? Answer in closest category. The percentages for each line that applies to you must add up to 100%.

Serious need means that there is a threat of partial or complete loss of the object unless it is treated soon. Need refers to a need for routine treatment. No need means that the object is in very good condition or already conserved. In-house treatment refers to treatment done by museum staff. Nonstaff/consultant refers to that carried out off premises or done by non-museum staff members. (Zoos include emergency medical care as well as breeding.)

		% in need of treatment Total = 100%				% professionally tr in last 10 year.	
Category	Approx. # in collect.	serious need	need	no need	don't know	in-house	nonstaff/ consultar
1. aeronautics, include space/airplanes							
2. animal (live) (number of species)							
3. animal preserved							
4. anthropological, ethnographic							
5. archeological							
6. books, newspapers (exclude reference material and microfilm)							
7. ceramics, glass							
8. documents, manuscripts, maps							
9. film (exclude photographs)							

continued on next page

Type	Approx. # in collect.	% in need of treatment TOTAL = 100%				% professionally treat in last 10 years	
		serious need	need	no need	don't know	in-house	nonstaff/ consultant
10. furniture							
11. geological, mineral, paleontological							
12. historic houses and buildings							
13. historic sites							
14. horological							
15. landscape features, constructed (fountains, gazebos, etc.)							
16. machinery							
17. maritime vessels							
18. medical, dental and pharmacological							
19. medals							
20. military, include weapons and guns							
21. money and numismatics							
22. musical instruments							
23. paintings							
24. philatelical							
25. photography, negatives							
26. photography, prints							
27. physical science objects							
28. plants (live) (number of taxa							
29. plants, preserved							
30. sculpture, indoor							
31. sculpture, outdoor							
32. textiles and costumes							
33. tools							
34. toy and doll							
35. transportation (exclude air)							
36. works of art on paper							
37. other (specify)							

Note: Please check this item to be sure that the percentages add up to 100 for each line that applies to you.

D. If you answered "nonstaff/consultant" in the previous question, answer the following questions about their primary affiliation. Botanical gardens should include landscape or restoration architects and land planners.

How many of the consultants are employed by nonprofit cooperative (regional) labs? (For zoos and botanical gardens, include state, university, extension or local hospitals and animal labs.) 1. ____ Number 2.____ Don't know 8.____ N/A

How many of the consultants are employed by private conservation laboratories or private firms? 1.____ Number 2. ____ Don't know 8. ____ N/A.

How many of the consultants are employed by other museums? (do not include above categories) 1.____ Number 2. ____ Don't know 8. ____ N/A.

E. Does your museum provide treatment of objects or specimens other than those belonging to the institution? (circle one) 1. Yes; 2. No If yes, are fees charged for these services? (circle one) 1. Yes; 2. No

F. Does your museum provide its own staff or other museum professionals with training in any of the following areas? If yes, specify whether the training is done in house or on the outside.

		Training obtained:	
Training in:	Training Provided?	In-house	Outside training progra (specify organization)
a. Routine handling of objects (include specimens and animals)	1. Yes ____ 2. No ____ 8. N/A ____	____	____
b. Preparation of condition reports	1. Yes ____ 2. No ____ 8. N/A ____	____	____
c. Security of objects on exhibit? (refers to object, not visitor safety)	1. Yes ____ 2. No ____ 8. N/A ____	____	____
d. Environmental (control) monitoring	1. Yes ____ 2. No ____ 8. N/A ____	____	____
e. Conservation	1. Yes ____ 2. No ____ 8. N/A ____	____	____

G. Within the past five years has the museum had information programs on conservation of objects and collections (records) management for the general public? Check appropriate area. (Specify such programs as plant hotlines, clinics and information sheets.)

Program	Conservation	Collections Management
1. Consultation Days		
2. Workshops		
3. Films and other media programs		
4. Exhibits		
5. Lectures		
6. Other (specify) ____________		

H. Does your museum face problems that affect the proper care of your collections? (Indicate the level of problem. If not applicable, check N/A column.)

Lack of...	severe problem	problem	no problem	N/A
1. Designated funds for conservation				
2. Proper storage space/holding and quarantine areas				
3. Proper storage equipment/plant equipment (ex. cherry picker, pesticide sprayer)				
4. Exhibition space				
5. Conservation laboratory (include propagation and nursery spaces/ veterinary hospital/breeding facilities)				
6. Availability of contract conservators				
7. Qualified conservation staff, in-house				
8. Control of illumination				
9. Control of pests				
10. Control of mildew and mold				
11. Air pollution control				
12. Security				
13. Humidity control				
14. Temperature control				
15. Staff awareness of conservation needs				
16. Trustee awareness of conservation needs				
17. Water resources/proper animal diet				

V Collections (Records) Management

Refer to the glossary for definitions of "inventory" and "catalogue."

A. 1. What percentage of the collection is exhibited on a regular basis? ____%

2. What percentage of the collection is inventoried? ____%
(For botanical gardens, what percentage of the collection is surveyed or mapped?)

3. Is your inventory/survey up-to-date? (circle one) 1. Yes; 2. No.
Date of last complete inventory? ________

4. What percentage of the collection is catalogued? (i.e., detailed accession records) ____

5. What percentage of the collection is photographed? ____%
(For botanical gardens, what percentage of the collection is documented by herbarium specimens?)

B. Rate of growth of the collection over the last five years _____%

C. Collections records: What type of file is used?

	Manual file	Computer file
1. Inventory	____	____
2. Catalogue/detailed records	____	____

3. If computerized, what type of software is used? Circle all that apply.

1. GRIPHOS
2. SELGEM
3. DARIS
4. ISIS
5. Other (specify) __________
8. Don't know

D. 1. Does the museum have written policies on accessions? (circle one) 1. Yes; 2. No; 8. N/A

2. Does the museum have written policies on deaccessioning? (circle one) 1. Yes; 2. No; 8. N

3. Does the museum have written policies on lending and borrowing objects? (circle one) 1. Yes; 2. No; 8. N/A

4. Are conservation considerations included in your loan policy, whether written or not? (circle one) 1. Yes; 2. No; 8. N/A

5. If your museum has a conservator/veterinarian/horticulturist on staff, is he/she included in accessioning decisions? (circle one) 1. Yes; 2. No; 8. N/A
Deaccessioning decisions? (circle one) 1. Yes; 2. No; 8. N/A

VI Museum Activities

A. Check the activities for the care and management of the collections that your museum already undertakes to your satisfaction.

B. What will be your museum's six most important activities in the next decade for the care of your collections? Choose only 6 and rank them (1 is highest; 6 is lowest).

	A. Activities undertaken currently	B. Six activities to be undertaken
1. Registration of collections	______	______
2. Cataloguing of collections	______	______
3. Computerization of inventory and catalogue data	______	______
4. Developing adequate storage space	______	______
5. Developing adequate security	______	______
6. Upgrading temperature and humidity control	______	______
7. Conservation of objects/collections	______	______
8. Education of museum personnel	______	______
9. Education of museum trustees	______	______
10. Education of general public	______	______
11. Examination of collections conditions	______	______
12. Obtaining conservator/veterinarian/horticulturist on staff	______	______
14. Upgrading laboratory equipment	______	______

Names and titles of persons completing questionnaire:

Signature Please print name and title

Signature Please print name and title

Signature Please print name and title

-- THANK YOU --

Botanical gardens, arboretums, zoos and aquariums - please complete supplemental sections that follow.

Please return completed questionnaire in the enclosed self-addressed, stamped envelope.

MAIL TO:

Lisa David
American Association of Museums
1055 Thomas Jefferson St., N.W.
Washington, DC 20007

American
Association
of
Museums

July 11, 1984

Dear Colleague:

The American Association of Museums, in cooperation with the National Institute for Conservation and the American Institute for Conservation, is engaged in surveying the collections needs of the nation's museums. Congress suggested that this study be done and provided funds for it in the fiscal '84 appropriations for the Institute of Museum Services. The project is under contract to the Institute. The study that will result will establish priorities within the museum community by pointing to areas in need of conservation services, help guide the planning of federal funding in the area of care and maintenance of collections, and encourage new and increased sources of private support.

Your institution has been chosen to participate in this very important survey. In three to five days, you will receive a questionnaire requesting information on the type of objects in your collection and their condition, your facilities, staff and access to conservation services. Please complete the questionnaire as soon as possible and return it to the American Association of Museums. The information will be tabulated by the American Institute for Research, an independent consulting firm, and the resulting statistical information will be used in the final report to be written by the AAM. All of the responses to the questions are voluntary and will be confidential. No individual responses will be released to the IMS.

I cannot overemphasize the importance of this project to the long-term health of the nation's collections. This is the first time that such information is being gathered and systematically assessed. The necessity of painting an accurate picture of the nation's collections will have benefit to the entire museum community and will provide the field with a sense of what needs to be done to increase public benefits from collections and to preserve them for the future. Your cooperation, therefore, is essential to the success of this effort.

Thank you very much for your assistance.

Sincerely yours,

Lawrence Reger
Director

1055 Thomas Jefferson Street
Northwest
Washington DC

Telephone
(202) 338-5300

American
Association
of
Museums

July 19, 1984

Dear Colleague:

As described in my letter of July 11, 1984, the American Association of Museums has undertaken, at the request of the Institute of Museum Services, a study of the current state of the nation's collections. The goal of the study is to assess the current condition of the objects, the awareness of conservation problems on the part of museum's staffs, and the availabilty of funds to care for the collections.

The survey is being sent to 700 museums of all types, seeking information concerning the condition of collections and the facilities in which they are housed. This survey is the first of its kind.

Your museum has been selected to participate in this very important survey. One copy of the questionnaire is enclosed with a self-addressed stamped envelope for your convenience. Please return the completed questionnaire by August 8, 1984 to the American Association of Museums.

Please be assured that no individual museum data will be released to the Institute of Museum Services or any other organization. All records will be kept at the AAM office. Participants will receive a copy of the survey results when they are published.

A high level of response is extremely important to the success of the survey. The AAM believes that it is in the interest of both the museum community and the government to have an accurate picture of the state of the nation's collections in order to direct planning by museums and service organizations, as well as public and private funding agencies.

If you have any questions regarding the survey, please call Susan Bandes or Lisa David at the AAM, 202-338-5300.

Thank you very much for your assistance.

Sincerely yours,

Larry Reger

Lawrence Reger
Director

1055 Thomas Jefferson Street
Northwest
Washington DC

Telephone
(202) 338-5300

American
Association
of
Museums

July 30, 1984

Dear Colleague:

The American Association of Museums, in cooperation with the National Institute for Conservation and the American Institute for Conservation, is engaged in surveying the collections needs of the nation's museums. Congress suggested that this survey be done and provided funds for it in the fiscal '84 appropriations for the Institute of Museums Services. The project is under contract to the Institute. The results of the study will establish priorities within the museum community by pointing to areas in need of conservation services, help guide the planning of federal funding in the area of care and maintenance of collections, and encourage new and increased sources of private port.

Your institution is one of 700 museums selected to participate in this very important survey. The enclosed questionnaire seeks information concerning the condition of collections and the facilities in which they are housed. Please complete the questionnaire as soon as possible and return it to the American Association of Museums. A self-addressed stamped envelope is enclosed for your convenience.

The information will be tabulated by the American Institute for Research, an independent consulting firm, and the resulting statistical information will be used in the final report to be written by the AAM. You will receive a copy of the survey results when they are published.

All responses to the questionnnaire are voluntary. Please be assured that no individual data will be released to the Institute of Museum Services or any other organization. All records will be kept at the AAM office.

A high level of response is extremely important to the success of the survey. The AAM believes that it is in the interest of both the museum community and the government to have an accurate picture of the state of the nation's collections in order to direct planning by museums and service organizations, as well as public and private funding agencies.

I cannot overemphasize the importance of this project to the long-term health of the nation's collections. This is the first time that such ormation is being gathered and systematically assessed. Your cooperation, therefore, is essential to the success of this effort.

1055 Thomas Jefferson Street
Northwest
Washington DC
20007

Telephone
(202) 338-5300

If you have any questions regarding the survey, please call Susan Bandes or isa David at the AAM, 202-338-5300.

hank you very much for your assistance.

Sincerely yours,

Lawrence Reger
Director

August 15, 1984

Dear Colleague:

A few weeks ago you received a questionnaire on the conservation needs of your museum's collections. The deadline for responding was August 8th and as of today, we have not received your completed form. We realize that the questionnaire is long and that staff members are on vacation in August and may not be available to work on the questionnaire. We have, therefore, extended the deadline to August 25th for the receipt of the form at the AAM office.

Please take a few minutes today to complete the form. Your museum was carefully selected as part of the sample of the museum community we surveyed. Without your response the statistical results of the survey will not represent accurately or broadly the state of the nation's museums.

If you have any questions about the survey, the deadline or if you d another questionnaire, please contact Susan Bandes or Lisa David the AAM, 202-338-5300.

I cannot stress how vital your information is to this project. Congress, federal agencies, foundations and corporations need this information to help them make decisions about supporting museums. I know you will agree with me that the museum community will be the real beneficiaries from the results of the survey in planning the future care of the nation's collections.

Thank you for your cooperation.

Sincerely yours,

Lawrence L. Regan
Director

APPENDIX D

Members of the IMS Advisory Committee

James Morton Smith
Chairman and Director Emeritus
Henry Francis du Pont Winterthur Museum
Winterthur, DE

Charles Bieler
Executive Director
San Diego Zoo
San Diego, CA

Russell Fridley
Director
Minnesota Historical Society
St. Paul, MI

James Hester
President
New York Botanical Garden
Bronx, NY

Joyce Hill Stoner
Conservator
Henry Francis du Pont Winterthur Museum
and Director
Conservation Training Program
University of Delaware
Winterthur, DE

Albert T. Klyberg
Director
Rhode Island Historical Society
Providence, RI

Roger Nichols
Director
Boston Science Museum
Boston, MA

Paul Perrot
Director
Virginia Museum of Fine Arts
Richmond, VA

Theodore Reed
Senior Advisor
National Zoological Park
Washington, D.C.

Ann Russell
Director
Northeast Document Conservation Center
Andover, MA

Samuel Sachs
Director
Minneapolis Institute of Arts
Minneapolis, MN

Ex-Officio Members

Arthur Beale
Director
Center for Conservation and Technical Studies
Fogg Art Museum
Harvard University
Cambridge, MA

Craig Black
Director
Natural History Museum of Los Angeles County
Los Angeles, CA

Elizabeth Fitzhugh
Conservation Scientist
Freer Gallery of Art
Ithaca, NY

Thomas Leavitt
Director
Herbert F. Johnson Museum of Art
Ithaca, NY

SUPPLEMENT TO PROJECT 1: ON-SITE SURVEYS

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REPORT OF THE ON-SITE SURVEYS

INTRODUCTION

As a supplement to Project 1, the Museum Collection Survey, the AAM coordinated on-site visits to 12 museums for the purpose of assessing collections care activities. Professionals with experience in on-site surveys were selected to visit and review the museums' collections and facilities. Through direct contact with staff and through personal observation, the visiting teams learned about the institutions' successes and difficulties in providing care for their collections. The findings of the surveyors are based on candid reviews of each museum visited and are intended to provide a context in which the large amount of statistical information resulting from Project 1 can be placed. These findings do not provide additional statistical analysis regarding collections care, nor do they replace any of the statistical data from Project 1. Rather, they provide examples of collections care practices within museums operating currently.

In planning this portion of the study, the AAM appointed a staff coordinator for the on-site surveys. The coordinator, Joy Norman, served previously as the coordinator of the AAM accreditation program. Ms. Norman consulted a number of professionals as she developed the design and agenda for this part of the study. These professionals are listed in Appendix D, Advisors to the On-Site Surveys, and represent a wide range of expertise in all disciplines of museums.

The Selection of Museums for On-Site Surveys

Survey advisors assisted the staff coordinator in selecting a group of institutions that represent the diversity of American museums. The museums chosen for the study represent varied diciplines, governances, budget sizes, geographic locations, as well as different levels of strengths and needs regarding their conservation and collection care programs. The institution's interest in the study and its willingness to cooperate were also important criteria for selection. The final selection of museums was made after repeated consultation by the project staff with survey advisors and administrators of the participating museums.

The following museums were visited. Each museum is listed with a brief description highlighting its characteristics that are unique in this group of twelve, and that are reflective of a number of other U.S. museums that are not represented here.

1. Minneapolis Institute of Arts, Minneapolis, MN.

The Minneapolis Institute of Arts is a large art museum with important collections and a long history of a successful conservation program. The museum added a conservation lab to its facilities in 1969, which was converted in 1979 to the Upper Midwest Regional Conservation Center. The museum is now one of 40 museums that are members of the regional lab, which retains its location at the Minneapolis Institute of Arts.

2. Medium-sized university art museum (name withheld at museum's request)

This institution is a medium-sized university art museum with a large and diverse collection and varied needs in its collections care program. The collection includes paintings, works on paper, textiles, decorative arts and costumes.

3. Montclair Museum of Art, Montclair, NJ

The Montclair Museum of Art is a small art museum with a significant collection that had serious needs in its collections care program, but addressed those needs through major improvements to its physical facilities.

4. Henry Ford Museum and Greenfield Village, Dearborn, MI

The Henry Ford Museum and Greenfield Village is an indoor and outdoor museum containing one of the most unique and complete history collections in the United States, including millions of objects of all types and over 80 historic structures. The diversity of the collection presents every imaginable challenge and problem in collections care.

5. Montana Historical Society, Helena, MT

The Montana Historical Society is a large historical society with collections of materials relating to the history of Montana, as well as valuable art collections and ethnographic materials relating to the Plains Indians. Little conservation work has been done at the museum; in fact, there is no conservator in the state of Montana.

6. Mercer Museum, Doylestown, PA

The Mercer Museum is a small history museum with an important collection of American tools dating before the "steam age." The museum was created in a concrete "castle" and is unique because its exhibits and concepts have remained unchanged since its founding in 1916.

7. California Academy of Sciences, San Francisco, CA

The California Academy of Sciences has large natural history collections that are ranked among the best in the world, actively serving all aspects of basic scientific research in natural history. The Academy has a positive history regarding collections care.

8. Peabody Museum of Natural History, Yale University, New Haven, CT

The Peabody Museum of Natural History is a medium-sized university museum with a collection that encompasses all areas of natural history and anthropology. The museum faces many collections care problems that are known to exist in other university-affiliated museums of natural history.

9. Fairchild Tropical Garden, Miami, FL

The Fairchild Tropical Garden is a medium-sized botanical garden. The garden is noted for its emphasis on tropical horticulture, specifically in palms and cynads.

10. Washington Park Zoo, Portland, OR

The Washington Park Zoo is a medium-sized zoological park with a collection of about 500 animals -- primarily reptiles, birds and mammals. The zoo's aggressive staff has dealt successfully with many of its collections care needs over the past 10 years.

11. Peabody Museum of Salem, Salem, MA

The Peabody Museum of Salem is a medium-sized general museum that was established in 1867. The museum inherited the holdings of the East India Marine Society whose members had been gathering "natural and artificial curiosities" from all parts of the world since 1799. The collection includes ethnograpic materials, natural history specimens, paintings, ship models, navigational instruments, maritime tools and other materials. The museum recently established priorities for conservation and hired a full-time conservator.

12. Museum of Coastal History, St. Simons, GA

The Museum of Coastal History is a small history museum and historic site with a significant collection, including many photographs, and few resources to care for them. The museum faces the special problem of being located on the sea coast.

Selection of Surveyors

Each visit was conducted by a museum director and a conservator or other museum professional with conservation expertise. Twenty-four surveyors were chosen. The following criteria were used in the selection. The surveyor should 1) be a museum professional with experience in administration and/or collections care; 2) have professional experience in conducting on-site evaluations; 3) possess a professional level of knowledge about the type of museum and collections to be visited; and, 4) be willing to visit a selected site and participate in the evaluation of that site's collections care programs. A list of surveyors and the museums visited by each are presented in Appendix C.

The Visits

Visits lasted from one to two days, depending on the size and complexity of the museum. Team members met with the museum director and staff members with responsibility for collections care. They also made careful inspections of the museum's facilities and collections. The findings of the team, therefore, were based upon both conversations with staff and direct observation. In order to prepare for the visit, the site team was furnished with background information on the project, including a copy of the museum collection survey questionnaire (Project 1) that had been completed by the museum, and guidelines for conducting the visit (See Appendix B).

The following information presents the highlights of the on-site surveys and is based on the reports of each on-site visit. Seven major areas of museum operations that relate to collections care are discussed: physical facilities, staffing, finance, conservation needs and program, collections management, security, exhibits and public programming.

PHYSICAL FACILITIES

The need to improve the physical environment of museum collections emerged again and again as one of the most serious problems facing museums that were visited. An inadequate physical environment is one of the greatest causes for the deterioration of collections; improving the environment may be the single most important factor in preventing further decline. Problems were noted in museums of art, history and natural history, but appeared to be most acute in history museums. This may be attributable to the fact that many history museums are located in older buildings that require more complex and costly modifications to make the improvements necessary to insure a stable environment.

High Levels of Illumination

A serious threat to collections is the lack of protection from high intensity levels of illumination and ultraviolet radiation. For example, the central exhibition area at the Henry Ford Museum is the "Hall of Technology," a massive eight-acre room containing large unfiltered skylights throughout. Extensive deterioration of objects from high levels of natural illumination are evident. Controlling light in the "Hall of Technology" is a costly endeavor. However, without ultraviolet shielding over all windows, the condition of objects on display will continue to decline at a rapid rate.

Excessive light is frequently a problem in private residences converted to exhibit space. The windows in the parlor of the lightkeeper's house at the Museum of Coastal History are glazed with ultraviolet filters, but light levels were considered to be too high.

Artificial lighting can also be a culprit. At the Montana Historical Society, the deterioration of light-sensitive objects that were displayed under high levels of artificial lighting was cited. The objects displayed in this manner included valuable and fragile water colors and field sketches.

Extremes and Fluctuations of Temperature and Humidity

Equally serious problems that are causing rapid declines in collections are extremes and fluctuations of temperature and humidity. Two history museums that were visited illustrate the dimensions of this problem.

As mentioned above, the Mercer Museum is housed in a concrete "castle" that includes over 70 small rooms located around a 62 feet, multi-tiered central court. Exhibits remain as originally conceived with objects suspended from walls and ceilings, as well as in niches in the concrete that provide a kind of built-in shelving. The building has no heat or air conditioning, and temperature in the structure ranges from 20 to 80 degrees fahrenheit annually. "Indoor rain" has been observed, caused by interior/exterior thermal gradients and condensation. Despite the deterioration of objects under such unstable conditions, no plans have been developed to add a climate control system because typically available solutions appear to be impracticable and costly. There is the additional dilemma that is common in history museums. Installing a climate control system would substantially alter the structure and original concept of the building. Any changes must be made with much thought and great care.

The Henry Ford Museum and Greenfield Village complex includes over 80 buildings, none of which are environmentally controlled. While it is probably technologically impossible to install an environmental system in the eight-acre "Hall of Technology," one solution might be to add control to key areas of the museum in order to protect the most vulnerable objects in the collection. Installation of an environmental system in storage areas would allow objects that are most sensitive to changes in temperature and humidity to be grouped together, and vulnerable objects on display to receive an environmental control, most notably the music gallery which includes fragile musical instruments that already show damage from the changing temperature and high humidity. Environmentally controlled exhibit cases could be constructed for such fragile objects.

The investment of substantial resources for the control of temperature and humidity does not guarantee a solution to the problem. An example is the Museum of Coastal History, whose sea coast location magnifies the difficulties of achieving a stable environment. A sophisticated air conditioning system was financed through grants and installed in the museum in 1977. The project has proven very disappointing. High levels of humidity are still present in the museum and sea salts short out the electronic filters. The system is in need of re-evaluation so that appropriate action may be considered.

Several instances in which significant progress has been made to improve environmental conditions should be noted. The Montclair Art Museum is introducing climate control to both exhibition and storage areas. Not only will the improved environment help stabilize the condition of the collection, but it will also allow the museum to remain open to visitors during the summer months for the first time, rather than removing the museum's collection to the protection of storage vaults during hot and humid months. The Peabody Museum of Salem recently completed a new wing to provide a properly controlled environment for the collections exhibited in it and to increase storage areas. Museum staff have been able to relocate more vulnerable collections, such as some ethnograpic material, paintings and prints, to this new wing from less desirable storage areas in other parts of the building. Environmental controls in several older segments of the building have also been improved in recent years.

The physical facilities at the Peabody Museum of Natural History at Yale University make adequate collection care a serious problem. As is the case in many other university museums, the collections are not housed in a single museum building. Rather, they are housed in eight buildings on the university campus. Climate control varies significantly from building to building and few collection areas have satisfactory environments. Objects most in need of improved environmental controls are the ethnographic, vertebrate paleontological and vertebrate zoological collections. The lack of climate control also creates a serious dust problem, which was noted as a special hazard in areas lacking proper storage cases.

Collection Storage

Storage areas that are inadequate in both quality and size were cited as a problem at most museums that were visited, confirming results of the museum collection survey. At the Montana Historical Society and the Henry Ford Museum, storage was found to be very crowded with pieces of furniture stacked on top of one another, and all available floor and shelving units filled to capacity. It was noted that upgraded shelving and storage units might increase the capacity of the storage area threefold and also provide better protection for stored collections.

Crowding was noted also at both the Peabody Museum of Natural History and the California Academy of Sciences. In the museum collection survey, natural history museums report housing the largest collections of all museum types. The fossil vertebrate collection at Yale/Peabody, considered to be among the most notable in the United States, is housed in nine crowded rooms. Again, storage problems are magnified by the absence of proper shelving units. Collection areas for the ornithology and mammalogy department at the California Academy of Sciences are filled to capacity, with the lack of adequate cabinets and racks also seen as a major problem. This situation may become even more critical for the Academy in light of the possible addition of another major collection.

Art museums are not without problems when it comes to adequate collection storage. At the Minneapolis Institute of Arts, the principal storage area is a vast, undifferentiated space holding many kinds of objects including paintings, furniture, sculpture, glassware, silver and porcelain. The storage area is targeted for improvements that include the addition of a second level of storage space. The problems faced by the university art museum are typical of many university collections. Because of very limited gallery space at the museum, only a small percentage of its vast collection is on display. The visiting team noted that every available space in the museum has been developed by the museum staff to meet storage needs, but storage areas remain crowded and are often remote, inconvenient and dirty. To compound an already serious problem, a kitchen, used for general purposes as well as social functions, is sandwiched between the print storage areas and a proposed area for photographic storage. The kitchen poses potential hazards from water, smoke and fire to a very sensitive collection.

The most serious collection storage problems were noted in storage areas located away from museum buildings. When the Museum of Coastal History had used all of the available space on its premises, it moved some of its collection to the attics of historic house museums on nearby Jekyll Island. Likewise, the Montana Historical Society stores objects in a warehouse located some distance from the museum. In both cases, the stored collections are subject to heat buildups in summer, extreme cold in winter, little air circulation, and damage from mice and other vermin. Under such primitive conditions, rapid deterioration of collections is inevitable.

On a more positive note, the Mercer Museum was able to establish an off-premises collection storage facility through the purchase of property adjacent to the museum building. The facility provides a high-level of care and has done much to alleviate overcrowding in the museum. However, the number of objects in the collection continues to require additional storage space.

Collection storage areas at the Fairchild Tropical Garden were considered to be adequate in size and quality to assure reasonable care for living and stored herbarium plant collections. Expansion of the herbarium collection is not possible unless additional space is acquired. Sufficient and adequate space is often cited as a problem for botanical gardens, particularly for behind the scenes functions such as propagation and specialized care for collections. Often, greenhouses, cold frames and lath houses, which are protected outside areas for the transitional storage of young plants, are outdated and poorly maintained.

At the Washington Park Zoo, adequate space exists for animals in areas both visually accessible to the public and out of public sight. No minimal standards for the space requirements of animals have been established by the zoo profession, although such standards are expected to be developed over the next decade. However, a nonpublic facility is needed for five or six additional bull elephants to maintain genetic variability. This type of facility is desirable because of the much greater cost involved in public exhibition and because bull elephants are extremely dangerous and not appropriate for close contact with the public.

STAFFING

A staff that is adequate in both size and specialized training, or has access to that training, is essential to a successful collections care program. Curators, who shoulder the primary responsibility for the collection, are diverted frequently from this responsibility as they perform other duties. At smaller museums, curators, often the only museum professionals on staff, are forced to take on many administrative functions, such as public relations, fundraising and educational programming. This was noted at both the Mercer Museum and the Museum of Coastal History. At the university art museum, curators are responsible not only for the collection but for developing many special exhibitions annually. It becomes readily apparent that often the many demands placed on curators prohibit them from providing the consistent level of attention required by the objects if appropriate collections care is to be achieved.

An encouraging note is that the Henry Ford Museum and Greenfield Village, which was forced by declines in endowment income and a reduction in attendance to curtail its conservation program several years ago, has recently approved the appointment of two new positions, a chief conservator and an architectural conservator. These are seen as very significant steps to a strengthened collections care program.

The need for additional staff on the curatorial level is considered to be critical for the California Academy of Sciences. Currently, a backlog exists in the mounting of over 80,000 biological specimens, including many important historical collections. The herbarium is also seriously understaffed. In the department of Ornitholoigy and Mammalogy, current staff members struggle to maintain the adequate preparation, conservation and preservation needs of the collection. Specimens that are not mounted and filed are unavailable to the scientific community for research.

Additional technical staff for collections care are also needed at the Fairchild Tropical Garden. Many botanical gardens need additional staff for management of the collections.

Need for Additional Staff Training

Many staff members desire more widespread and comprehensive basic training in the care and preservation of collections. Since the staffs of many institutions are small in number and operating budgets are tight, conservation training might be most effective if offered on a cooperative basis. Curators need to be instructed in methods and procedures to be avoided, as well as in proper procedures to be followed for handling, exhibiting and storing objects. Also needed are consultants who can be called upon for help when a serious conservation problem arises.

Regional training would be of great assistance to museums located in remote areas. The staff of the Montana Historical Society has found that available training opportunities are often located a great distance from the museum and, with no conservator located in Montana, acquiring the necessary expertise and training is very difficult.

FINANCES

The site visits confirm the findings of the museum collection survey that in most cases a very small percentage of a museum's operating budget is allocated to the conservation and preservation of the collection. Contrary to the results of the survey, conservation funds, when adjusted for inflation, are either remaining at a constant level or declining in two-thirds of the museums visited. Four museums visited indicated that their conservation funds were on the increase.

The surveyors of the university art museum reported that no major improvements to the care and management of the collection are possible until more money is available. Currently, only about three percent of the operating budget is directly allocated to conservation and restoration. At the Montclair Museum, drastic cuts in the budget for conservation treatment have been necessitated by the financial demands of the building's renovation. Greater resources are needed particularly for the care of the nonpainting collections. The Minneapolis Institute's budget allocation for collections care is deemed to be adequate and stable, although the surveyors expressed concern that conservation funds are perhaps inadequate to meet the anticipated growth in the collection.

The curator of the Mercer Museum indicated that more than 32,000 objects in the collection require serious levels of conservation treatment. With a yearly allocation of approximately one dollar per object for conservation and preservation, no likelihood exists at the present time for the establishment of a program to treat deteriorating pieces. One of the greatest needs at the Montana Historical Society is a conservation lab and staff. The museum is dependent on the state legislature for support of its conservation plans and funds are not expected to be forthcoming.

Conservation treatment at the Peabody Museum of Salem has been limited in the past to restoration or repair of objects needed for exhibitions, totalling an average of $5,000 annually. However, about one half of the money raised in a recent fund drive is being used to establish an endowment to support improved collections management and conservation programs. The endowment is helping to fund a position for a conservator who initially came to the museum under a National Science Foundation grant. The endowment drive is a positive indication of successful private funding for conservation.

The Peabody Museum of Natural History at Yale and the California Academy of Sciences both indicate that their conservation funds are remaining at a constant level. Additional resources are needed at Peabody/Yale to upgrade the care of certain collections and to computerize the collection records. The California Academy needs additional financial support for collections care so that current grant funds can be replenished when they expire.

CONSERVATION PROGRAMS

Each team was asked to devote careful attention to the current condition of the museum's collection and its conservation needs. While many objects were reported to be in good to excellent condition, many others were cited as needing immediate specialized care.

In considering the twelve museums as a group, the collections in art museums appeared to be in the best condition and in the least need of immediate attention. This is in part attributable to the smaller number of objects held by art museums, compared to museums of history and natural history. Also, training and expertise is more widely available in fine arts conservation than in other types of conservation specialties.

The collections of the Minneapolis Institute of Arts have benefitted from a long history of professional conservation care, with a full-time conservator first hired over 15 years ago. The collection, both on display and in storage, is in excellent condition. A 1979 grant to the Montclair Art Museum from the National Endowment for the Arts provided treatment for paintings in the American collection. Objects in other collections are thought to be in good condition, except for Montclair's American Indian collection of ethnographic materials, of which 30 percent is thought to be in critical need of treatment. In the judgment of the visiting team to the university art museum, approximately 20 percent of the collection needs immediate treatment.

The collections of history museums are often in need of treatment because of the large number and great diversity of objects. The staffs of the Montana Historical Society and the Mercer Museum noted that approximately one-quarter of their collections need immediate conservation care. At the Henry Ford Museum, staff members have determined that well over one-half of all objects are in need of conservation care.

Historic structures at Greenfield Village suffer the double fate of exposure to the environment and wear and tear from visitors, which total approximately one million annually. Site drainage problems and wet basements were noted, but the overall condition of the buildings was described as good.

Collections at both museums of natural history were described by team members as generally good. Noted exceptions were ethnographic collections at the Peabody Museum at Yale and anthropological collections at the California Academy of Science. In addition to conservation treatment, anthropological collections often require fumigation before being integrated into collections. Thus, the museum should have fumigation facilities in-house or have access to them elsewhere, as is the case with the Academy.

The need for a general survey of the care requirements of objects in the collections, in order to document what is needed and to set realistic priorities for care, was cited by almost every site team as an immediate and essential requirement for a successful conservation program. The inventorying and evaluating of collections is time-consuming and requires professional expertise. At the Peabody Museum of Salem, for example, it has taken one year to inventory 22,000 ethnographic objects. The total ethnographic collection contains 250,000 items.

Current Conservation Programs

Of the 12 museums visited, three of the largest included a conservation lab and staff. These museums and most others also utilize regional or commercial labs in their conservation programs.

The Minneapolis Institute of Art established a conservation lab in 1969, when it hired its first full-time conservator. The lab continued to grow, and in 1979 was converted to the Upper Midwest Conservation Association (UMCA), a regional lab which is a consortium of 40 museums including the Minneapolis Institute. The institute feels that the change does not reduce the conservation services to the museum's collection, but substantially reduces direct costs to the museum. The university art museum houses a small lab for its textile conservator; however, the collection is of sufficient size and significance to warrant additional conservation staff and facilities. The museum supplements its conservation program through membership in a regional lab; however, a small conservation budget limits participation.

Although the Henry Ford Museum maintains a conservation lab, its program and conservation staff have been severely reduced over the past five years because of the budgetary restrictions mentioned earlier. The program will be reactivated over the next several months with the addition of a chief conservator.

At the Peabody Museum of Salem, the staff feel that the establishment of a conservation lab and the employment of a full-time conservator are major steps toward improving the collections care program. Because many items in the collection have been in storage for over 100 years, the curatorial staff and conservator determined that an "inventory" program to examine and evaluate artifacts and their condition is the first step in a comprehensive conservation program for the collections. The attention devoted by the conservator to this process leaves little time for the treatment of objects. It is estimated that an effective conservation laboratory for the Peabody would require four permanent conservators in the area of paper, paintings, ethnographic items and decorative art objects, as well as a skilled restorer for ship models and figureheads. Many objects requiring prolonged or extensive treatment continue to be sent to outside laboratories.

Much of the operation of botanical gardens is directed toward proper collections maintenance. Horticulturists are charged with the maintenance of collections at botanical gardens and arboretums. An important responsibility of the horticulturist is plant propagation. At some gardens, plants are propagated primarily for display. At many other gardens, plants are propagated not only for display but also for research and, in the case of endangered populations or species, for the continuation of their survival. To insure the propagation of endangered plants, the Center for Plant Conservation has been established to encourage botanical gardens to accept responsibility for the propagation of different threatened species. Participating gardens also accept responsibility for maintaining records on the endangered plants in their care. Funding for the Center for Plant Conservation has been obtained from private foundations; however, additional funds are needed to insure that the activities of the center are maintained and strengthened to prevent extinction of endangered plants.

The maintenance of living collections in zoos is the responsibility of a team, consisting of a zoologist, veterinarian and zoo keeper. The keeper assumes daily responsibility for the animals and plays a critical role in the maintenance of collections. A skilled keeper can detect hidden injuries and determine if problems are developing among individual animals. When injury or illness occurs, the veterinarian is contacted. A special component of a zoo's conservation program is propagation to insure preservation of genetic variability in a captive population. Different zoos are designated primary breeders of different species, as determined by AAZPA. The Washington Park Zoo devotes special attention in its breeding program to the Asian elephant, the chimpanzee and the Humboldt penguin.

Need for Additional Research

Additional research is needed in many areas to insure that methods of collections care and conservation will safely and properly maintain the collections for future generations. Conservators visiting history museums noted that not enough research has been done in the field of historic artifact conservation. Ethnographic collections were also cited as requiring additional study.

The museums visited are aware that the effect of certain environments on collections is not completely understood. For example, little is known of the effect of the arid environment of the Rocky Mountain and Plains regions of the United States on museum collections. Research is needed to establish environmental perimeters for arid areas as well as other climatic conditions.

The teams that visited the natural history museums concurred that the need for additional research into proper collections care is the most critical problem facing natural history collections as a whole. Many methods of preservation for natural history collections have been based upon "convention" rather than definitive, scientific studies. Much remains unknown about long-term effects and, in fact, some conventional practices have proven to be harmful rather than beneficial to collections. An area requiring immediate study is the long-term effect of pesticides on objects as well as on the staff members who use or come into contact with such chemicals.

Additional research is important to those charged with the care of collections in botanical gardens. At the Fairchild Tropical Garden, a number of collections have been lost to a disease known as lethal yellowing. Currently, there are no known cures for this disease, and additional study is considered critical. Research at zoological parks is continuous and is directed toward the propagation and maintenance of individuals and populations of animals.

COLLECTIONS MANAGEMENT ACTIVITIES

A sound collections management program is critical to all other services that emanate from a museum's collection. Without written records detailing the history and significance of an object, its provenance, description and location, the object becomes a much less useful item for display or research.

Taken as a whole, history museums have suffered most from an absence of adequate collection records. This has occurred because of the large number of objects in collections, indiscriminate collecting and frequent dependence on volunteer or untrained staff to administer collections. The history museums included in these on-site surveys are no exception. At the Henry Ford Museum and Greenfield Village, 80 percent of the collection is inventoried, while 13 percent of the collection has more detailed catalog records. At the Montana Historical Society, only 10 percent of the collection has been inventoried and an additional 15 percent cataloged. These statistics differ dramatically from the results of the museum questionnaire where approximately 70 percent of history collections are reported to be catalogued.

Curators in natural history museums are called on for many duties, including the pursuit of original research in connection with the collection. Consequently, some areas of organization, documentation and record-keeping fall irrecoverably behind schedule without adequate technical help. The director of the Peabody Museum at Yale cited collection recordkeeping, along with adequate space, as the most pressing need for the museum. Estimates are that about one-third of the collections at the Peabody Museum at Yale are not cataloged. Computerization of records was also considered to be a high priority at this museum, but no funds are currently available to begin such a project.

Adequate recordkeeping has tended to be less of a problem in art museums, again, because of characteristically fewer numbers of objects in the collections. At the Minneapolis Institute, records are thought to be adequate with the exception of some location files. Registration of objects is nearly complete at the university art museum.

Both zoological parks and botanical gardens have centralized recordkeeping programs to which individual institutions belong and participate. Animal acquisitions are recorded in the American Association of Zoological Parks and Aquarium's centralized recordkeeping program in Minnesota (ISIS). Plant records for botanical gardens are maintained by the Plant Sciences Data Center of the American Horticultural Society. Through ISIS and the Plant Sciences Data Center, records are maintained and are available to all participating zoos and botanical gardens.

SECURITY

Improving the security of collections from fire and theft was listed as a high priority by one museum, the Montclair Museum of Art. The museum indicated that the funds needed to improve its security program are currently available.

The team sent to the university art museum noted that the only exit from a kitchen used by staff and caterers was through a graphic arts storage area. This poses significant security risks.

Other museums noted that several buildings on their premises are in need of fire or burglar alarms. The Henry Ford Museum and Greenfield Village reported a number of buildings with such needs. Fifty-six buildings were in need of a fire alarm system and 64 were in need of burglar alarms.

The visiting team to the Washington Park Zoo determined that the need for additional fire protection was a pressing problem facing the zoo. The team noted that most of the animal quarters are considered "fire-proof," constructed primarily of concrete and steel. However, they felt that a potential danger to the animals, just as to humans, is from poisonous fumes given off by burning materials, particularly plastics. Both fire detection devices and water sprinklers are needed. The lack of intrusion alarms was also noted.

EXHIBITS AND EDUCATIONAL PROGRAMS

Educating the public to the nature and necessity of the conservation and preservation of objects can be a great step in increasing knowledge and support. Museums have found that exhibits as well as educational programs are very effective methods of conveying an understanding of these areas to large audiences.

The Minneapolis Institute of Arts has determined that public awareness of collections care and conservation is an important educational objective. To foster public understanding, the museum developed a video tape documenting the treatment of an Oriental screen which is shown in an exhibition gallery. An x-ray presentation in the Egyptian gallery illustrates the cooperative research effort of the curators of Egyptian collections and the conservation staff. Visitors to the museum may also view firsthand the conservation of textile materials.

The Washington Park Zoo was the only institution visited that has a written policy and goal to "educate the public regarding conservation." Over the past few years, the planning of new exhibition facilities has included a zoo educator so that newly developed facilities will include interpretive graphics and texts on the animals' lifestyles and conservation status. An example is the Penguinarium which features

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Humboldt penguins in a simulated Peruvian coastal habitat. The Penguinarium gives special emphasis to educating the public regarding their endangered status in the wild. The zoo also presents an exhibit which features models and information on extinct animals.

CONCLUSION

The information included in this report is illustrative of the many activities in museums that affect the care of their collections. These 12 museums were asked to rank in order of priority four activities in their museums. Half of them ranked conservation of collections as fourth. In contrast, two-thirds ranked exhibits or education as their first priority. Museums recognize that informative and attractive public programs are the basis of necessary popular support that brings revenues from gifts, admission fees and sales. Conservation and the management of collections are, on the other hand, expensive, primarily behind-the-scenes activities that do not produce income. To meet the serious challenges that are posed by the proper care of the collections in America's museums, more museums and their audiences need to recognize the wisdom of long-term collections care.

APPENDIX A.

GUIDE FOR CONDUCTING SITE-VISITS

The following is a list of issues and questions that have been deemed important to the case-study component of the conservation study that is being conducted by the AAM in conjunction with the National Institute for Conservation and the American Institute for Conservation. This listing is meant to serve as a guide in preparing for the site visit and aid in drafting the narrative report.

The site visits are not intended to involve value judgments. Rather, the visits will provide an opportunity for the director and staff of the institution to discuss in a frank and candid way, their successes and difficulties in providing adequate care for the collection in their charge. Information gathered through the site visits will supplement the statistical data gathered in the survey of 700 American museums, and will provide more detailed and anecdotal information in the conservation needs of American museums.

In conducting the visit, it is suggested that you meet with the museum director and each principal staff member who has responsibility for collection care. Sufficient time should be allowed for careful inspections of the museum's facilities and collections. The final report, therefore, will be based upon your conversation with staff as well as both team members' direct observations.

A. Physical Facilities

1. Do the museum's physical facilities provide adequate protection for the collections from:

   a. high intensity levels of illumination and ultraviolet radiation?

   b. fluctuations and extremes of temperature and humidity?

   c. air pullution?

   d. If needed, have plans been developed for improvements?

2. Are collection storage areas adequate in size and quality to assure reasonable care for stored collections? (Describe collection storage for different types of the museum's collections, if applicable.)

3. Describe major capital improvements of the past five years and their effect on the museum's ability to provide adequate care for its collection.

   Was care for the collection a primary motivating factor in undertaking the capital improvements?

   Are major capital improvements that would improve collection care planned for the next five years?

4. If the institution includes historic structures, describe the museum's program to care for their buildings. Also describe any unique problems that the institution may face in providing adequate care for its historic buildings.,

B. Staff

1. Is staff size adequate to provide reasonable care for the collection (not including need for outside expert conservation consultation and services)?

2. Do staff responsible for collection care have adequate training/expertise?

3. Do relevant staff members participate in continuing education programs that relate to collection care?

   What type of additional staff training, if any, would be useful?

   Is that type of training currently available?

C. Finances

1. Is the financial support of the museum reasonably adequate to meet the collection care needs of the museum?

2. Describe aspects of collection care most in need of additional financial support.

D. Collections

1. Describe the museum's collections and their unique significance to the community the museum serves, the scholarly community and the general American public.

E. Conservation of Collections

1. Based upon staff recollection; describe the museum's conservation program of recent years. (The number of years to be included will depend upon the length of time the museum has had an active conservation program and the tenure of present staff.)

2. Describe the current condition conservation needs of the museum's collections.

   In light of current museum resources, and projected resources, how successfully can the museum address the collection's conservation needs over the next five years? 10 years?

3. Describe the current conservation program and activities.

   Are the facilities adequate to meet the care needs of the collection?

5. Describe, if applicable, on-premises conservation facilities. Include the uses of the lab and its equipment.

6. Is adequate outside assistance (regional labs, private conservation facilities, consultants from other museums), available within regional proximity of the museum to meet its conservation needs?

7. Describe any unique conservation problems that the museum faces in caring for its collection. Is additional research by trained conservators needed to find answers and solutions to these problems?

F. Collection Management

1. Is collection recordkeeping adequate for the documentation and retrieval of objects? Describe deficiencies and needed improvements.

G. Exhibits

1. Describe the routine care of objects on display, including:

   a. maintenance of exhibit cases.

   b. maintenance of temperature and humidity in galleries and exhibit cases.

H. Security

1. Does a security alarm system and/or security offices provide reasonably adequate protection for objects on display and in storage?

2. Is fire detection and protection equipment adequate?

I. Program and Educational Activities

1. Has the topic of collection care and/or object conservation been addressed in the museum's exhibition or educational program?

2. Are stored collections easily accessible to visiting scholars?

3. Are accessioned objects utilized in participatory educational programs?

APPENDIX B.

LETTER OF REQUEST FOR PARTICIPATION

April 17, 1984

Mr. Warren Iliff
Director
Washington Park Zoo
4001 S.W. Canyon Road
Portland, Oregon 97221

Dear Mr. Iliff:

The American Association of Museums, in cooperation with the National Institute for Conservation and the American Institute for Conservation is engaged in surveying the needs of the collections housed in the nation's museums and zoos. The survey has been undertaken at the request of Congress, which provided funds for the project in the fiscal 1984 appropriations for the Institute of Museums Services. The study that will result will help guide federal funding programs in this area, encourage new and increased sources of private support, and help establish priorities within the museum community. To do this, the AAM will survey approximately 700 museums of all types. To supplement the statistical data of the survey, twelve site visits to museums will be scheduled to provide a more detailed and anecdotal component to the project.

Your institution is one of the twelve museums selected nationwide we would like to participate in the site visits. The museums chosen represent well the diversity of American museums and include art, natural history, history museums and sites, botanical gardens, arboretums and zoological parks. We have attempted to select museums of varying sizes and types that represent strengths as well as needs in the area of conservation and collections maintenance.

The visit, which will take one to two days, will be conducted by two persons; an individual with broad museum experience and a zoological conservator familiar with programs of species survival and collections maintenance. They will meet with you and with other members of your staff involved with caring for the museum's collection and species survival.

I would like to assure you that no value judgment is involved in the site visits and that the identity of your institution will be considered confidential if you wish. It is, rather, an opportunity for you and your staff to discuss in a frank and candid way, your successes and difficulties in providing adequate care for the collection in your charge.

The visit will be scheduled at a time convenient to you. However, the deadline for the completed project requires that all visits be conducted by June 15, 1984. Prior to the visit, you will be asked to complete a questionnaire on your institution and its species survival program in order to provide background information to your visiting team.

Joy Norman, former secretary to the AAM Accreditation Commission, will be coordinating this project for the AAM. Ms. Norman will call you in several days to answer any questions you may have. Should you choose to participate, she will begin to work with you to schedule the visit.

I cannot over-emphasize the importance of this project to the long-term health of collections and the importance your participation will make to the success and impact of the study. Thank you for joining with me in the unusual opportunity the project presents to assist museums in one of their areas of greatest need.

Sincerely yours,

Lawrence L. Reger
Director

APPENDIX C

SURVEYORS FOR SITE VISITS

Survey of California Academy of Science:

Charles McLaughlin, Director
Museum of Natural History
San Diego, CA

Gregory Pregiall
Museum of Natural History
San Diego, CA

Survey of Fairchild Tropical Garden:
Ann L. Crammond, Director
Atlanta Botanical Garden
Atlanta, GA

William E. Barrick, Vice President & Director
Callaway Gardens
Pine Mountain, GA

Survey of Ford Museum/Greenfield Village:

Robert F. McGiffin, Conservator
Kansas Museum of History
Topeka, Kansas

Henry Chambers
Chambers & Chambers, Architects
Medina, OH

Survey of Mercer Museum:

Michael J. Ripton, Director
Bureau of Historic and Museum Services
Harrisburg, PA

Kory Barrett, Assoc. Objects Conservator
Winterthur Museum
Winterthur, DE

Survey of Minneapolis Institute of Arts:

Timothy Lennon, Conservator
Art Institute of Chicago
Chicago, IL

Joy Y. Norman, Coordinator
On-Site Surveys
American Association of Museums

Survey of Montana Historical Society:

Ellsworth Brown, President & Director
Chicago Historical Society
Chicago, IL

Charles Patterson
Rocky Mountain Regional Conservation
  Center
University of Denver
Denver, CO

Survey of Montclair Art Museum:

William Johnston, Assoc. Director and
  & Curator
The Walters Art Gallery
Baltimore, MD

E. Melaine Gifford, Conservator of Paintings
Walters Art Gallery
Baltimore, MD

Survey of University Museum (Anonymous):

Charles Parkhurst, Deputy Director
  of Special Projects
Williams College Museum of Art
Williamstown, MA

Margorie Cohn, Assoc. Conservator of
  Works of Art on Paper
Fogg Art Museum
Cambridge, MA

Survey of Museum of Coastal History:

Peter Rippe, Director
Roanoke Museum of Fine Arts
Roanoke, VA

Teresa Fairbanks, Paper Conservator
Yale Center for British Art
New Haven, CT

Survey of Peabody Museum of Natural History:

Bruce McMillan, Director
Illinois State Museum
Springfield, IL

William Phippen, Conservator
Peabody Museum of Salem
Salem, MA

Survey of Peabody Museum of Salem:

William N. Richards
Acting Asst. Sec. for Museum Programs
Smithsonian Institution
Washington, D.C.

Stephen Brooke, Conservator
Maine State Museum
Augusta, ME

Survey of Washington Park Zoo:

Larry Nevling, Director
Field Museum
Chicago, IL

Saul L. Ketchener, Director
San Francisco Zoo
San Francisco, CA

APPENDIX D

ADVISORS TO THE ON-SITE SURVEYS

Craig C. Black, Director
Natural History Museum of Los Angeles County
Los Angeles, California

Craig Bowen, Executive Director
Museum of History of Science
Louisville, Kentucky

William Donaldson, President
Philadelphia Zoological Garden
Philadelphia, Pennsylvania

Alvin Gerhardt, former President
Small Museum Committee
American Association of Museums

Peter LaPaglia, Director
Wichita Falls Museum and Art Center
Wichita Falls, Texas

Susan Lathrop, Executive Director
American Association of Botanical Gardens and Arboreta
Swarthmore, Pennsylvania

Thomas Leavitt, Director
Herbert F. Johnson Museum of Art
Ithaca, New York

Harold D. Mahan, Director
Cleveland Museum of Natural History
Cleveland, Ohio

Bruce McMillan, Director
Illinois State Museum
Springfield, Illinois

Harry S. Parker, Director
Dallas Museum of Art
Dallas, Texas

Daniel R. Porter, Director
New York State Historical Association
Cooperstown, New York

Theodore Reed, Director Emeritus
The National Zoo
Washington, D.C.

Peter M. Rippe, Director
Roanoke Museum of Fine Arts
Roanoke, Virginia

Suzanne Schell, formerly Coordinator
Self-Study for State Historical Societies
National Endowment for the Humanities Project

William C. Steere, Scientist
The New York Botanical Garden
Bronx, New York

Roy Taylor, Director
University of British Columbia Botanical Garden
British Columbia

Robert Wagner, Director
American Association of Zoological Parks and Aquariums

Katherine Watson, Director
Bowdoin College Museum of Art
Brunswick, Maine

PROJECT 2: CONSERVATION FACILITIES AND PROFESSIONALS: A SURVEY REPORT

TAB F

CONSERVATION PROFESSIONALS AND FACILITIES:

A SURVEY REPORT

NATIONAL INSTITUTE FOR THE CONSERVATION
OF CULTURAL PROPERTY, INC.

Washington, D.C.
February, 1985

submitted to the American Association of Museums as part of "Collections Management, Collections Maintenance and Conservation", under contract to the Institute of Museum Services

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III Conservation Professionals Questionnaire Non-Living Collections

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VI Survey Instruments

VII Assisting Professionals and Calendar of NIC Activities

CONSERVATION PROFESSIONALS AND FACILITIES: A SURVEY REPORT

Introduction

The survey report which follows is a major component of the study "collections maintenance, collections management and conservation", that has been undertaken by the American Association of Museums (AAM), the American Institute for Conservation of Historic and Artistic Works (AIC) and the National Institute for the Conservation of Cultural Property, Inc. (NIC). NIC, as subcontractor to AAM, has participated in this study, principally by conducting in-depth research to assess the availability of conservation personnel, training and facilities in the United States. While prior surveys conducted by NIC have addressed some issues that are examined here, this is the first attempt by NIC to document comprehensively the nation's capacity to meet the conservation needs of museums' collections.

Background

In considering how an assessment of conservation capability in this country might best be achieved, NIC consulted representatives of national organizations and other prominent professionals with experience in the field to design a survey methodology. Through meetings conducted over a three-month period, the NIC staff developed two survey instruments for national distribution (see Appendix VI). Conservation professionals participated enthusiastically in this effort, advertising the study at professional meetings and encouraging colleagues to cooperate to assure an accurate and comprehensive analysis. Special appreciation is due to the American Association of Botanical Gardens and Arboreta (AABGA), the American Association of Zoological Parks and Aquariums (AAZPA), the American Institute for Conservation of Historic and Artistic Works (AIC), the International Species Inventory System, the Species Survival Plan, and to the many directors of conservation facilities around the nation who recognized the importance of their contributions to this research. The NIC also acknowledges gratefully the continuous assistance of the staff of the Smithsonian Institution's Office of Information Resource Management. Many of these individuals are identified in Appendix VII, along with a brief project calendar summarizing NIC's activities.

The Conservation Constituency

During the development stage for this survey, the NIC staff worked with representatives of other organizations to identify the professional conservation constituency that exists in the United States. This constituency includes professionals responsible for the conservation of living and non-living collections. While the conservation of living collections embraces different activities from the conservation of non-living collections, practitioners agree that certain principles and goals of conservation are uniform. Consequently, with some careful definition of terms and concepts, the same survey instruments were used for both audiences; however, the survey results were analyzed separately.

The conservation profession that serves non-living collections is readily identifiable and approachable through the membership of AIC; the entire field, including all specializations, is reflected in this report. Conservation within the context of living collections is much less clearly defined and, therefore, more difficult to identify. Practitioners advised the NIC staff that the study of this constituency coincides with a growing need within it for agreement regarding what constitutes actual conservation of living collections. Key professionals and facilities providing conservation services were targeted for this study by the AABGA and AAZPA, associations that represent the interests of living collections. Because the concept of conservation is perceived so broadly within the context of living collections, data obtained from this selected sample is regarded as an important pilot study in the development of consensus among those charged with the conservation of these collections. For this study, definitions applicable to the conservation of living and non-living collections were developed and stated in the introductory sections of the questionnaires.

The Survey Instruments

The two survey instruments, "Conservation Professionals Questionnaire" and "Conservation Facilities Questionnaire", were developed by the NIC staff in consultation with the boards of directors of NIC and AIC and representatives of living collections. Analysis of data resulting from this survey of conservators and facilities documents the following:

- geographic distribution of conservators and conservation facilities
- areas of conservation specialization
- educational backgrounds of conservation professionals

- — educational activities in conservation offered by facilities
- — funding for training in conservation
- — budgets for conservation facilities, including sources of income and expenses
- — information on size of facilities, on profiles of staff, and on equipment capacities and needs
- — professional responsibilities of conservation staff, including research activities
- — institutional policies affecting conservation of the collections
- — needs of collections and of the people and facilities that conserve them

Response Rate to Conservation Questionnaires
(continued on following page)

CONSERVATION PROFESSIONALS QUESTIONNAIRE

Audience	Distribution	Adjusted Distribution	Response	Percentage
Non-Living Collections*	1596	1147	471	41.1%
Living Collections	283	230	118	51.3%
Totals	1879	1377	589	Av:42.8%

* Members of this audience, "conservation professionals for non-living collections," were asked to complete an additional section of the questionnaire if they own or manage a private conservation facility. Information was requested in this section (section VIII) about the facility in operation as a private firm. This is the first attempt by NIC to identify private conservation businesses. There were 125 respondents to this section of the questionnaire, representing 26.5% (125 of 471) of the participating audience. The results demonstrate that, based on reported budget sizes, these firms are small businesses and often function as part-time employment for conservators who also work in laboratories within institutional contexts (e.g. museums or regional centers).

CONSERVATION FACILITIES QUESTIONNAIRE

Audience	Distribution	Adjusted Distribution	Response	Percentage
Non-Living Collections	108	95	52	54.7%
Living Collections	190	140	68	48.6%
Totals	298	235	120	Av:51.1%

Key to the Response Chart:

Audience - conservators or conservation facilities serving non-living collections or living collections.

Distribution - number of surveys mailed originally to audience.

Adjusted Distribution - number of original distribution eligible to respond at time of mailing. Recipients of the survey who were not conservation professionals or directors of conservation facilities at the time of distribution (e.g. administrators, professionals in related areas, students, or other interested parties who hold memberships in AIC, AABGA, or AAZPA) were asked to return the questionnaire blank so that they could be removed from the survey base. Numbers were adjusted to reflect the many blank questionnaires, letters and telephone calls received acknowledging ineligibility.

Response - number of completed questionnaires returned to the NIC office by September 24, 1984, deadline.

Percentage - percentage of response for adjusted distribution.

Av. - Average percentage of both audiences.

Accountability for Non-Respondents:

In compliance with the request of the U.S. Office of Management and Budget, NIC staff observed conventional survey methods and surveyed a sample of non-respondents. The sample is 200 non-respondents, chosen randomly from all geographic locations. Results of this sample indicate that the majority of non-respondents (64%) chose not to respond for one of five reasons.

Reasons for Non-Response	Number Cited	% of Sample
1. non-conservator	35	17.5%
2. no time to complete	30	15.0%
3. recent change of address	22	11.0%
4. travelling at time of survey	21	10.5%
5. perceived survey as not applicable to interests	20	10.0%
		64%

Other reasons that were cited for non-responses were that individuals: did not receive the questionnaire; found the survey to be unnecessary or irrelevant; were tired of completing surveys; thought the survey was ill-conceived; were not interested in completing questionnaires; perceived a conflict of interest; had suffered an extended illness; perceived the survey as irrelevant to their specializations; missed the deadline; had retired; had already completed the AAM survey, and were not going to complete both; and had already completed the conservation survey for facilities and did not, therefore, complete the questionnaire for individuals.

SURVEY METHODOLOGY

The two audiences, professionals and facilities, were sent separate questionnaires in an effort to obtain information from conservation facilities as well as individual conservation professionals. The results of these two questionnaires were analyzed separately. There were two types of collections addressed by both questionnaires — living collections and non-living collections. The audiences representing each type of collection were analyzed separately for the following reasons: they represent two distinct groups that require distinct identification; and, the information solicited from the group representing living collections is heretofore uncollected, providing statistics on the audience in areas which are presently undefined.

The population was estimated to be relatively small, consequently the entire universe of conservation resources serving non-living collections was surveyed. A selected group of conservation resources serving living collections was sampled in an attempt to document information that may be useful as this audience continues to define professional conservation activities within its field.

When the population sizes were adjusted to account for the nonrespondents who are not conservators (estimated to be 17.5% on the basis of the telephone followup), the population size is decreased and the response rates are increased by approximately 10 %. Consequently, in regard to the survey of conservation professionals, the response rate increased from 42.8% to 51.9%; and in regard to the survey of conservation facilities, the response rate increases from 51.1% to 61.9%. The response rates that were obtained are more than adequate for analysis and generalization from a statistical viewpoint to the conservation population that serves non-living collections. The results of the survey of the living collection audience should be regarded as a study of a selected sample from which the results are representative of the sample surveyed only.

Part I: Analysis of Conservation of Non-Living Collections

This analysis of the conservation profession's capacity to conserve the nation's non-living collections is based on information received from directors of 52 institutional conservation facilities, managers of 125 private conservation laboratories, and 471 practicing professional conservators. These three audiences are defined in the following manner:

1. Institutional Conservation Facilities - These are conservation facilities that are housed in (or are under the jurisdiction of) museums, universities, historic sites, libraries or other institutions that provide conservation care for their own collections, and in some cases, for collections belonging to other institutions. Cooperative conservation centers are included in this group. The complete data collected from this audience is presented in Appendix I.

2. Private Conservation Laboratories or Facilities - These are privately-owned businesses operated by conservators. These facilities may service collections owned by a variety of clients — corporations, individuals, museums, historic societies, etc. — and operate on a "for-profit" basis. The complete data collected from this audience is presented in Appendix II.

3. Conservation Professionals - These are the individuals who are currently practicing at a professional level. They may work for institutional or private facilities, or may own a private facility. The complete data collected from this audience is presented in Appendix III.

Highlights from each of these three audiences are presented, followed by discussions of data resulting from the total research of conservation of non-living collections.

Highlights: Institutional Conservation Facilities for Non-Living Collections

Of the 52 institutional conservation facilities represented in this study, the majority

- are located in the New England and northeastern regions of the U.S.
- are museum laboratories (78.8%)
- serve their host institutions only (55.8%)
- have less than 10 full-time-equivalent employees on staff (63.5%) (The number of full-time-equivalent employees increases consistently with the budget size of the institution.)

- report that their greatest needs are additional staff and space
- have employees on staff or on contract who conserve paintings (59.7%) and works of art on paper (52%)
- have no conservation scientists on staff (over 75%)
- submitted budget information, stating conservation budgets that are less than 5% of their institutional operating budgets
- receive less than 20% of funding from federal sources
- receive less than 12% of funding from state and local sources
- did not offer basic training, internships, or advanced training for conservation in 1984
- ranked decisions regarding environmental controls as the number one area in which conservation expertise is needed in setting institutional policies

Highlights: Private Conservation Facilities for Non-Living Collections

Of the 125 private conservation facilities represented in this study,

- forty percent (40%) are located in the northeastern U.S.
- the majority (50.4%) have annual operating budgets under $30,000
- the majority receive 100% of their operating funds from fees for services
- over two-thirds (70.4%) have staffs numbering 2 or less; almost half (48%) have staffs numbering 1 or less (some are part time)
- the majority (52.8%) are managed by conservators who specialize in paintings conservation
- over two-thirds (70.4%) report that their facilities need additional information about conservation
- all reported a need for additional conservation or analytical equipment

* the majority rank environmental controls as the number one priority need of the collections they serve

* less than 12% host conservation interns

Highlights: Conservation Professionals Serving Non-Living Collections

Of the 471 individual conservators represented in this study,

* over forty percent (40.6%) are located in the northeastern U.S.

* almost half (48.4%) are employed by museum laboratories

* over half (58.4%) have worked professionally in the field for ten years or less

* the majority (56.7%) hold advanced degrees in conservation or related fields

* the majority (61.4%) have served as apprentices in conservation

* the majority (52.2%) report receiving some funds for their training from their training institutions

* over three-fourths (80.5%) report that requests for their services have increased over the past five years

* the majority (60.3) conduct applied research in conservation

* one-third (33.3%) conduct historical research

* the majority rank environmental controls as the number one priority need of the collections they serve

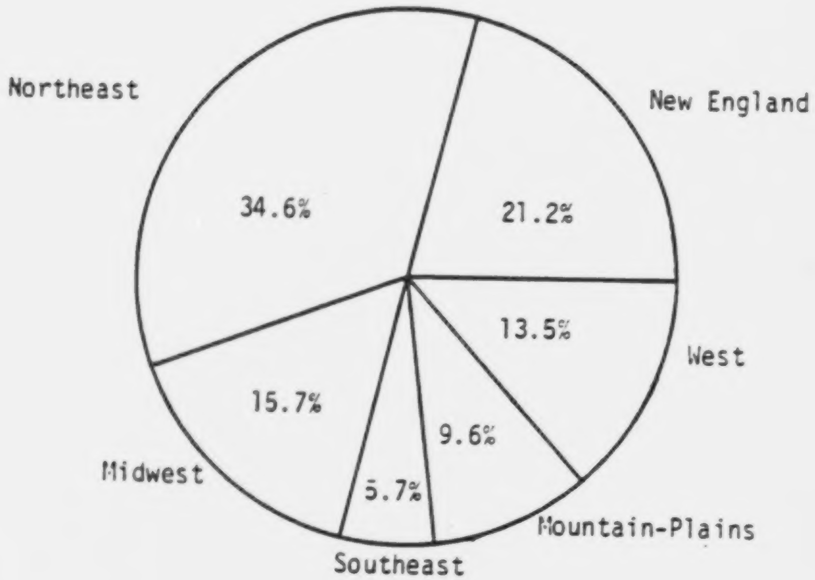
* the majority (58.2%) do not have decision-making roles in institutional policies regarding accessions and deaccessions

* over one-fourth (26.5%) manage private conservation facilities, although many of these are operated on a part-time basis

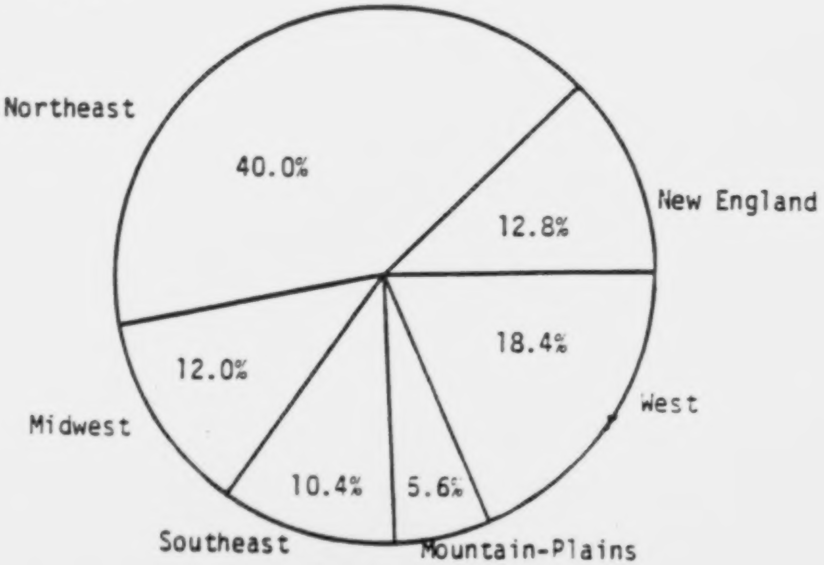
* less than one-tenth (7.6%) are conservation scientists

The following charts represent geographic breakdowns of facilities and individuals serving non-living collections.

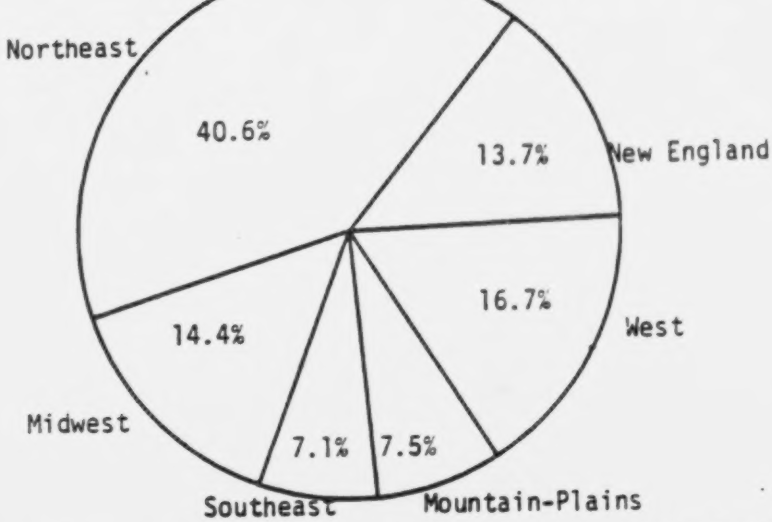
Conservation Facilities
(Institutional)



Conservation Facilities
(Private)



Conservation
Professionals>



Staff profiles of conservation facilities vary greatly between institutional facilities and facilities of conservators in private practice. Most institutional facilities have directors, chief conservators, conservators, assistant conservators, conservation technicians, and/or conservation support staff. Less than half have conservation scientists, conservation photographers, interns or advanced fellows/master apprentices. Private conservation facilities usually have small staffs (one or two employees) which include conservators only. Additional staff positions for conservation scientists or interns rarely exist in private laboratories.

An analysis of "Areas of Specialization" concludes that, of the 37 conservation specialties listed on the questionnaires, the following specializations are currently represented most frequently among conservation professionals and facilities. These specializations acknowledged most frequently indicate responses of at least 20% of the audience responding.

	Professionals	Institutional Facilities	Private Facilities
anthropological/ethnographic		X	
archaeological		X	
books	X		
ceramics/glass	X	X	X
documents/manuscripts/maps	X		X
furniture	X	X	X
paintings	X	X	X
sculpture	X	X	X
textiles	X	X	
works of art on paper	X	X	X

A geographic analysis of these specialties shows that the New England region has relatively high percentages of facilities conserving ceramics and art on paper, as well as facilities conserving books, documents, and historic buildings. The northeastern U.S. has a larger proportion of facilities conserving paintings, sculpture, furniture, and textiles.

The geographic distribution of conservators should be closely allied to the geographic locations of the collections which they serve — information not solicited by the conservation surveys. However, the surveys do document that the specialties that are geographically proportionated most closely to the overall geographic distribution of professional conservators are paintings conservation and the conservation of works of art on paper. The northeastern region has the highest percentage of each specialty due to the fact that 40.6% of all conservators live there. Further analysis of individual conservators indicates that New England has larger percentages proportionately of individuals conserving ethnographic and archaeological materials, documents, furniture, historic buildings, and sculpture. The midwest has smaller percentages of conservators of historic buildings, but larger percentages of conservators of furniture and sculpture. The southeast has large proportions of conservators of historic buildings and sculpture, but small percentages of conservators in ethnographic and archaeological conservation. The mountain-plains is proportionately high in ethnographic and archaeological conservation, historic buildings and sculpture, but low in furniture, textiles and art on paper. The west is high in paintings, ethnographic and archaeological, and books, but low in sculpture and furniture. The significance of these geographic breakdowns is difficult to determine. The distributions of conservation specialties may reveal actual geographic distributions of types of collections, or they may reveal areas in which specializations are over- or under-represented.

For purposes of analyzing staffing capabilities, directors of facilities were asked to identify areas of specializations in which staff or contract personnel are employed, as well as areas in which staff or contract personnel are needed. Thirty-seven specializations were listed on the questionnaires, along with a category listed as "other". These are very important concerns of conservation facilities because conservation, by its very nature, is highly specialized. Individuals who conserve one type of object may not be capable of conserving some other types of objects. Professional training in conservation, whether it is by academic study or apprenticeship, is largely by object-type. For example, someone who specializes in conserving paintings may not be able to conserve anthropological materials. Consequently, the areas in which personnel exist or are needed are important to identify. In presenting an analysis of data collected from this question, employed staff and contract personnel are referred to as "existing personnel", and staff and contract personnel needed are referred to as "reported personnel needs".

The following chart shows areas in which the highest percentages institutional of facilities reported "existing personnel" and "reported personnel needs". (Private facilities usually have no more than two employees, specializing in paintings or works of art on paper.) It is interesting to note that many of the same specializations appear in both columns.

EXISTING PERSONNEL (% of Facilities)		REPORTED PERSONNEL NEEDS (% of Facilities)	
paintings	59.7%	works of art on paper	53.9%
works of art on paper	52.0%	paintings	40.4%
textiles	44.3%	textiles	40.4%
ceramics	40.3%	photographic prints	34.6%
sculpture, indoor	36.5%	sculpture, indoor	32.7%
archaeological	32.7%	anthropological/ethn.	30.8%
anthropological/ ethnographic	32.6%	archaeological	30.8%
furniture	32.6%	books	27.5%
documents/manuscripts/ maps	26.9%	ceramics	27.0%
sculpture, outdoor	23.1%	furniture	25.0%
		documents/manuscripts maps	21.1%
		sculpture, outdoor	21.1%

The next chart illustrates "reported personnel needs" that at least double "existing personnel." It should be noted that, according to directors of institutional facilities, "reported personel needs" at least triple "existing personnel" in areas of medical, money, photographic prints, and tools.

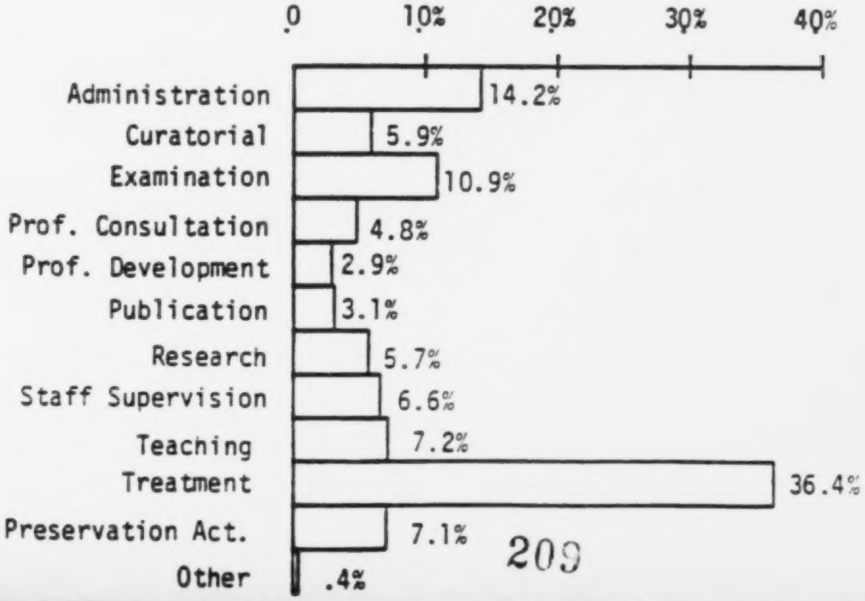
	EXISTING PERSONNEL (% of Facilities)	REPORTED PERSONNEL NEEDS (% of Facilities)
film, except photographs	3.8%	9.6%
medical/dental/health/ pharmacological	1.9%	5.7%
medals	3.8%	7.6%
money/numismatics	0	3.8%
musical instruments	3.8%	8.6%
philatelical	1.9%	3.8%
photography, negatives	7.7%	19.3%
photography, prints	9.6%	34.6%
tools	3.8%	11.6%

Areas in which the smallest percentages of facilities acknowledged existing personnel or needed personnel (under 5%) follow. It is interesting to note that many of the same specializations appear in both columns.

EXISTING PERSONNEL (% of Facilities)	
aeronautics	0
landscape features	0
maritime/historic ships	0
money/numismatics	0
toys and dolls	0
animal, live	1.9%
historic sites	1.9%
medical/dental/health and pharmacological	1.9%
philatelical	1.9%
film	3.8%
horological	3.8%
medals	3.8%
musical instruments	3.8%
tools	3.8%
transportation	3.8%

REPORTED PERSONNEL NEEDS (% of Facilities)	
aeronautics	0
animal, live	0
historic sites	0
landscape features	0
physical science objects	0
plants, live	1.9%
animal, preserved	3.8%
geological	3.8%
horological	3.8%
money/numismatics	3.8%
philatelical	3.8%
toys and dolls	3.8%
transportation	3.8%

An analysis of collective conservation staff time shows that positions in institutional facilities are "laboratory-intensive", with 36.4% of staff time being devoted to treatment and another 10.9% being devoted to examination. The remaining 52.7% is divided among 10 other areas of professional responsibility. The following graph illustrates the collective analysis of conservation staff time, as provided by directors of conservation facilities. This collective analysis is presented according to means, and therefore does not total 100%.



Individual conservators also reported a large percentage of time devoted to examination and treatment, 12.2% and 38.4% respectively. The means taken from responses of individual conservators to analysis of time show that individuals report less time devoted to curatorial activities and teaching, and more time devoted to professional consultation. These slight variations may reflect differing responsibilities of those working for institutional labs and those working for private facilities, since the individual responses include conservators in private businesses.

Acquiring appropriate conservation and analytical equipment remains an important priority and challenge for most laboratories. The following analysis resulted from questions asking directors of institutional facilities to prioritize the five greatest needs for major conservation and analytical equipment. These pieces of equipment which were identified as the greatest priority needs are followed by "current capacity" — the percentage of facilities which already have or have access to the equipment.

Conservation Equipment Priority Needs (mean rankings of priority needs)	Current Capacity (% of Facilities that have or have access)
1. vacuum cold table	38.4%
1. radiographic equipment	78.8%
2. photographic equipment	90.4%
3. environmental testing chamber	40.2%
4. binocular microscope	92.3%
5. fume hood	90.3%

Analytical Equipment Priority Needs (mean rankings of priority needs)	Current Capacity (% of Facilities that have or have acess)
1. computer	44.2%
2. X-ray diffraction	40.3%
3. X-ray fluorescence	40.3%
4. electron microscope	34.5%
4. gas chromatograph	32.7%
5. FTIR spectrometer	22.1%

Beyond requesting information about priority equipment needs, the questionnaires gathered additional detail regarding conservation and analytical equipment. Respondents were asked to provide information regarding major pieces of equipment that are in-house or are accessible to the conservation staff, and information regarding pieces that are needed (see Appendix I and Appendix II). The results reveal that higher percentages of institutional facilities than private facilities report equipment capacities (have or have access) and needs. Greatest equipment needs coincide more frequently with high capacities than with low capacities. The following chart highlights pieces of conservation and analytical equipment that are accessible to a majority of institutional facilities (greatest capacity). For comparison, these numbers are followed by the greatest capacities (have or have access) for private facilities.

	Greatest Capacity (Have or Have Access)	
Equipment Available	Institutional Labs	Private Facilities
Conservation:		
abrasive cleaning equipment	53.7%	23.2%
balance	78.8%	28.8%
flame-resistant solvent storage	82.7%	39.2%
fume hood	90.3%	36.0%
binocular microscopes	92.3%	50.4%
photographic equipment	90.4%	66.4%
spray equipment	67.3%	52.0%
vacuum hot table	63.4%	32.8%
radiographic equipment	78.8%	19.2%
Analytical:		
polarizing microscopes	75.0%	22.4%
photographic equipment	73.0%	36.8%
reflecting microscope	50.0%	20.0%

The following chart highlights overall needs acknowledged by recipients. Again, these figures are followed by percentages of need reported by directors of private facilities.

	Percentages of Need	
Equipment Needed	Institutional Labs	Private Facilities
Conservation:		
fume hood	34.5%	20.8%
environmental testing chamber	30.8%	8.0%
binocular microscope	30.8%	23.2%
vacuum cold table	26.9%	12.0%
balance	23.0%	8.8%
abrasive cleaning equipment	21.2%	9.6%
Analytical:		
computer	44.2%	14.4%

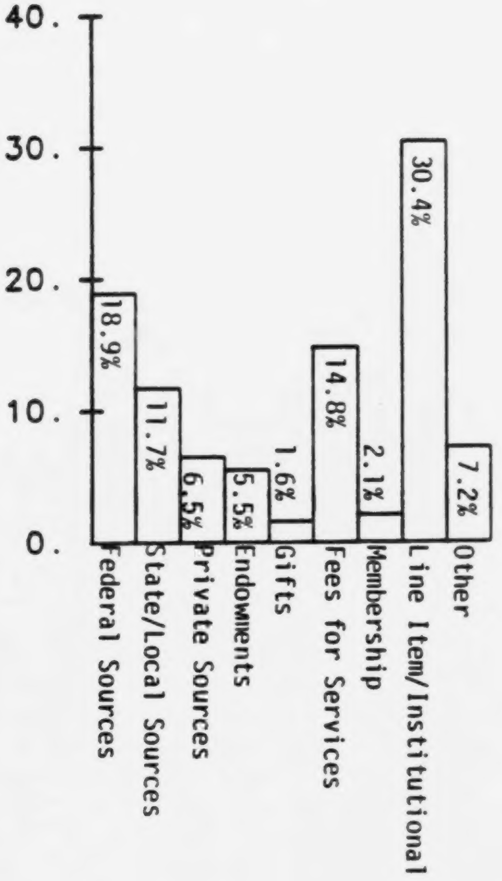
Additionally, directors of private facilities listed relatively high percentages of need for flame resistant solvent storage (18.4%) and photographic equipment (11.2%).

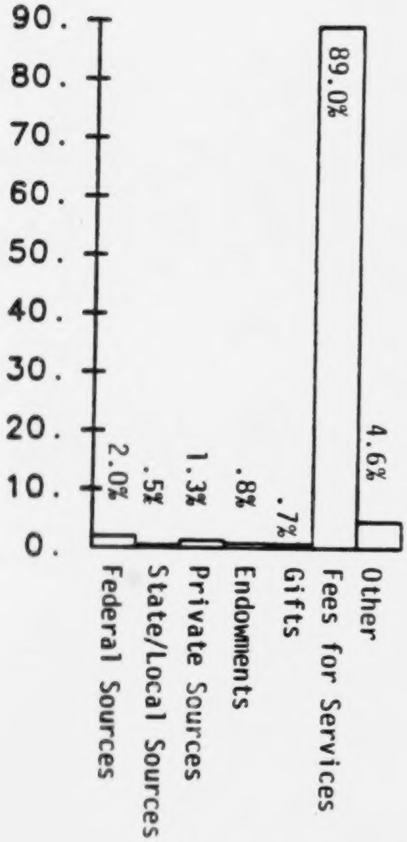
Conservation budgets have direct impact on the capacities of laboratories to care for the collections they serve - influencing size and character of staff, size of laboratories, equipment, and auxiliary activities such as education and research. Analysis of data shows that larger budgets for conservation coincide with larger staffs, more space, greater numbers of conservation and analytical equipment, and more educational activities. In fact, data from only one section of the questionnaires ("Needs") was not affected by budget differentials.

Budgets for institutional conservation facilities are most meaningful when analyzed within the contexts of budgets for their host institutions. Almost one-third (32.7%) of directors who provided budget information stated conservation budgets over $600,000, and one director stated a conservation budget of $1,550,000. However, when taken within the context of institutional budgets, the majority (56.1%) of conservation budgets are less than 5% of their institutional operating budgets. Over three-fourths (80%) of the participating facilities have budgets that are less than 25% of the institutional operating budgets. Conservation budgets commanding larger percentages of the institutional operating budgets are those reported by regional (cooperative) conservation laboratories, organizations whose sole missions are conservation.

Conservators in private businesses (i.e. directors of private conservation facilities) reported budgets in varying ways. These laboratories are usually "for profit" and do not figure operating budgets for the year in the same manner as institutional facilities. For example, some respondents acknowledged not including their "margins of profit" or salaries in the figures they provided as budgets. Others did not allow total costs for overhead because their businesses work under contract and utilize laboratories and equipment located elsewhere. Other respondents stated that their "cost of conducting business" is unknown until the end of the year. These reasons, along with the fact that quite a few conservators are in private practice on a part-time basis, account for the relatively low figures appearing as budgets for private businesses (50.4% are under $30,000; only 6.4% are over $100,000). Nevertheless, these figures are representative of professionals in private business and are reflective, in many cases, of actual budgets.

Apart from budget size, the greatest differences in finances between institutional facilities and private facilities are types of income and expenses that command the largest portions of the budgets. Below are graphs, based on mean responses, that demonstrate income and expenses for both types of facilities.


Sources of Income
Institutional Facilities

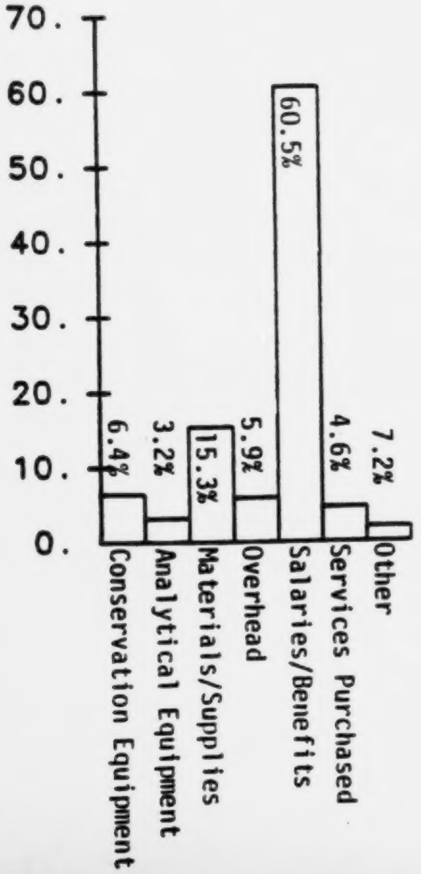

Sources of Income
Private Facilities

Income for private businesses is based almost exclusively on fees for services. Income for institutional facilities is based largely on the budgets of the host institutions, supplemented by outside funders such as government and private granting sources.

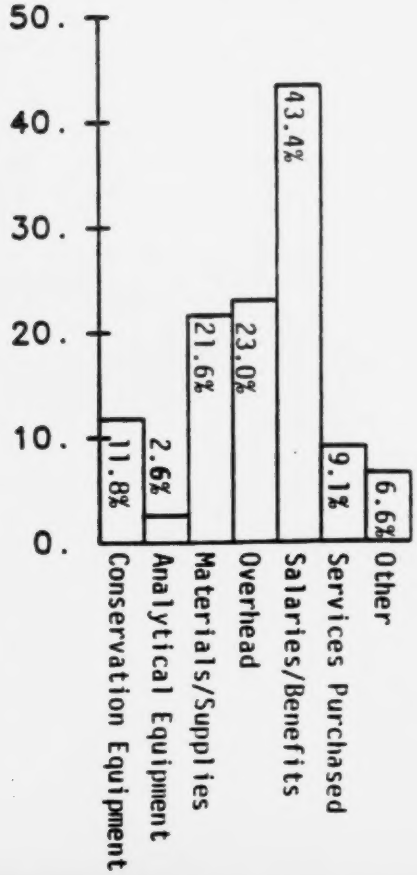
Budget analyses of facilities show that facilities with smaller budgets allocate greater, not smaller, percentages of their budgets to equipment and supplies. For example, the percentage of budgets expended on conservation equipment by private facilities nearly doubles the percentage of budgets spent in the same category by institutional facilities. The fact that equipment commands smaller percentages of larger budgets shows that even facilities with small budgets are attempting to equip their laboratories with equipment that is crucial to professional practice. The cost of equipping a laboratory are based on prices of equipment - costs that do not change to accommodate budget sizes of facilities. Consequently, equipment costs will always command higher percentages of small budgets than large budgets.

Other major discrepancies between the two audiences appear in percentages of budgets going to overhead and salaries. The difference in the former is due to the fact that overhead is not always the direct concern of conservation facilities within institutions. The latter may be explained because not all conservators in private practice (private businesses) estimated their own salaries in their budget analyses. Collective salaries for small staffs of private conservators may be proportionately less than for large institutional staffs.

Expenses - Institutional Facilities



Expenses - Private Facilities



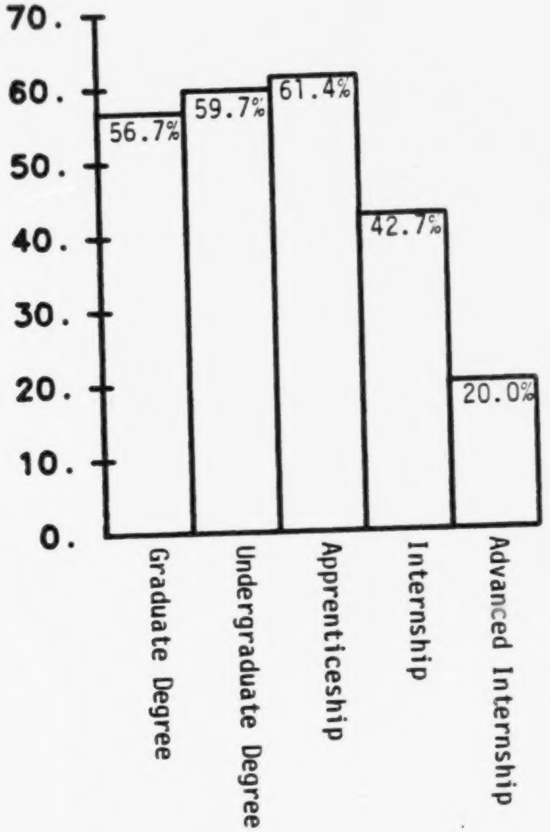
Educational activities offered by facilities are linked most frequently to size of staff (generally affected by budget) and type of institution. The questionnaires listed ten training activities. Opportunities for most activities have increased steadily over the past few years. Only 5.8% of respondents reported to have conducted none of these activities since 1978. Analysis of data demonstrates that larger staff sizes coincide with more intensive training activities such as internships and advanced training opportunities. The larger the staff, the fewer preparatory training activities are reported. Workshops and activities for clients are more frequent in facilities with staffs numbering more than 5. Proportionately, more training activities are conducted in regional (cooperative) conservation centers than in museum laboratories. The only exceptions, for which opportunities are equalized, are preparatory and basic training, workshops and programs for the general public. A geographic analysis of educational activities demonstrates that activities occur most frequently in areas with larger numbers of facilities. The Mountain-Plains and the Southeast regions, areas with few facilities, report high percentages of educational activity, demonstrating possibly that facilities in these areas are sensitive to the responsibilities they must shoulder in under-represented regions.

An analysis of educational opportunities in conservation is incomplete without attention devoted to internships. Only 11.2% of private conservators participating in this study host interns, and less than half of participating institutional conservation facilities report interns on staff. As stated earlier, a high percentage of regional conservation centers host interns. Percentages of facilities within each geographic region that hosted interns in 1984 follow.

New England	45.5%
Northeast	50.0%
Midwest	37.5%
Southeast	66.7%
Mountain-Plains	40.0%
West	42.9%

Conservators receive professional conservation training in a variety of ways. The majority report combinations of academic study and "hands-on" experience in conservation laboratories, e.g. internships and apprenticeships. The majority of respondents report holding undergraduate (59.7%) and graduate degrees (56.7%) that are related to conservation. However, it must be stated that respondents interpreted "related to conservation" quite broadly, including not only study in art history, anthropology, and education, but also administration, architecture and design, engineering, history, journalism, languages, museum studies, and the sciences. The responses demonstrate that the majority of practicing conservators hold academic degrees that are not conservation degrees per se. There are only three degree granting academic programs in conservation. These programs are graduate-level training programs that specialize in fine arts conservation and graduate a maximum of thirty individuals per year. This fact underscores further the importance of apprenticeships and other forms of laboratory training. Larger percentages of conservators report apprenticeship training (61.4%) than any other type of training.

The following graph illustrates percentages of conservators who received training in degree-granting academic study, apprenticeships, internships, and advanced internships.



The questionnaires also asked about institutional policies that affect the care of collections. Directors report that most facilities (75%) are not required to examine a certain percentage of the collections on an annual basis. This is substantiated further by the fact that 65.6% of professional conservators responded that they work for institutions with no annual examination policies. This may lead to the fact that directors of facilities report that, on the average, only ten percent (10%) of collections are examined annually. Analysis of data shows that only 9.8% of facilities examine more than 20% of their collections annually. Conservators and curators usually determine together what needs to be examined and subsequently treated. Slightly more than a third (34.6%) of conservators report having a role in determining accessioning and deaccessioning policies. These policies are more frequently determined by curators and institutional administrators.

The final sections of the questionnaires address areas of need for the nation's conservation facilities, the collections they serve, and their associated personnel. It is interesting to note that directors of facilities and individual conservators provided consensus on areas of need without regard to geographic location, area or specialization, size of budget, or source of income.

A majority of individual conservators reported that their facilities, collectively, are in need of "access to additional conservation information", "additional analytical equipment", "additional conservation equipment", "additional library and research materials", "additional space" and "additional staff". Private conservation laboratories reported higher percentages proportionately of need for "additional conservation information".

When directors of facilities were asked to rank priority needs for their facilities, additional staff and space were ranked first and second by the majority. These rankings hold true regardless of budget size, except in the case of #6. This breakdown follows.

Number 1 Need: staff
Number 2 Need: space
Number 3 Need: analytical equipment
Number 4 Need: conservation equipment
Number 5 Need: other (see questionnaire results for listings)
Number 6 Need: greater voice for conservation in institutional policies (ranked slightly higher by directors of facilities with small conservation budgets)
Number 7 Need: administrative organization, or reorganization, of facility

The fact that the need for staff was ranked as the number one need of facilities raises questions concerning the availability of conservation professionals. Directors of facilities were asked if conservation professionals are available to be hired, assuming that sources to support additional staff positions are available. The majority of those responding answered in the affirmative (73.1% of directors of institutional facilities and 53.6% of directors of private facilities). However, this question did not specify whether this perceived availability of personnel by directors includes personnel already employed in the field by other facilities. Personnel needs listed by directors in another section of the questionnaire (conservation specializations) demonstrate quantifiable personnel needs according to breakdowns by conservation specialties. These responses, along with the fact that there are only three conservation training programs in the United States (and only four in North America) and that many advertised positions in conservation are vacant today, reveal that, in practice, directors of facilities are having difficulties filling positions. This area of great need, staffing, requires additional research by all parties concerned.

Responses to another question indicate that the need for additional space is primarily for conservation laboratories and supplies, followed by space for storage and space for analytical equipment.

Regarding needs of the collections, directors of institutional facilities, conservators in private practice, and individual practitioners all agree that the number one need is better environmental controls. This concern was followed by needs in areas of storage and exhibition.

Individual conservators were given opportunity to address personnel needs. Responses to this concern indicate that additional financial support is ranked highest, followed by "conservation awareness among institutional administrators" and "better conservation training and awareness for staff".

Part II: Analysis of Conservation of Living Collections

This analysis of the conservation profession's capacity to care for the nation's living collections is based on a pilot study of 68 institutions and 118 individuals who are responsible for the long-term survival of the collections which they house and serve. These institutions and individuals were targeted by the American Association of Botanica Gardens and Arboreta and the American Association of Zoological Parks and Aquariums as resources that provide professional conservation service for living collections.

Because conservation is interpreted broadly within the context of living collections, data obtained from this selected sample is regarded as an important pilot study in the development of consensus of those charged with the conservation of these collections regarding professional activities that constitute conservation efforts. The two targeted audiences are defined, for the purposes of this survey, in the following manner.

1. Conservation Facilities or Laboratories - These are facilities within botanical gardens, zoos, or aquariums that undertake activities to assure the continuation of the collections, species or populations. These activities include special efforts to conserve these holdings and to assure their survival beyond the temporary lifespans of individual objects. Directors of conservation activity for these facilities were asked to complete the questionnaires. The complete data collected from this audience is presented in Appendix IV.

2. Conservation Professionals - These are professionals on staff or contract who conduct activities to conserve the collections, species or populations for long-term survival. These professionals may be plant or animal curators, horticulturists, nutritionists, pathologists, senior keepers, veterinarians, or research scientists, among others. The complete data from this audience is presented in Apendix V.

Highlights of data from these two audiences are presented, followed by a discussion of other insights achieved through this experimental survey of conservation of living collections.

Highlights: Conservation Facilities for Living Collections

Of the 68 conservation facilities participating in the study,

- the majority are institutions conserving animals - 50% are zoos and 5.9% are aquariums

- 44.1% are arboreta or botanic gardens
- over a third (38.2%) have conservation staffs numbering 5 or less; a fourth (25%) have conservation staffs numbering 10 or more
- those submitting budget information reported that conservation budgets are more often than not (64.9% of respondents) 25% or less of their institutional operating budgets
- the largest percentages of funding for conservation come from state and local sources (36.1%), followed by host institutional budgets (17%)
- sizes vary greatly - almost a fourth (22.1%) reported outdoor acreage exceeding 200 acres; 13.2% reported outdoor acreage not exceeding 5 acres
- directors of conservation for a majority of these institutions (57.4%) report that their institutions have policies requiring examination of a certain percentage of the collection on an annual basis
- 50% examine 100% of their collections annually
- less than half (39.7%) report that conservation professionals assist in determining institutional policies regarding examination, accessioning and deaccessioning
- over half have offered preparatory training in conservation and educational programs for the general public since 1979
- the majority report that their greatest needs are additional staff and space
- the majority report a strong need for a greater voice in setting institutional policy regarding grounds supervision and maintenance
- the majority report that additional space is needed most for breeding and propagation activities, followed by storage and holding

Of the 118 conservation professionals participating in the study,

- the highest percentages are located in the midwest (27.1%) and in the west (20.3%)

* the majority (69.5%) are employed by zoos; over a fourth are employed by arboreta (28%)

* the majority (60%) hold positions that are equivalent to "conservator", as defined in the questionnaires

* almost all (97.5%) are employed on a full-time basis

* the majority (68.8%) have worked in conservation for 15 years or less

* the majority (69.5%) hold undergraduate degrees related to their work in conservation

* the majority reported receiving no government or private funds to help support their training in conservation

* the majority (83.9%) report that requests for their services have increased over the past five years

* in contrast to information provided by directors of conservation, the majority of individual professionals (61.9%) stated that their institutions do not have policies requiring examination of a percentage of the collection on an annual basis

* substantial percentages conduct research in conservation - 60.3% of individuals employed by zoological parks and aquariums, and 44.1% of individuals employed by botanical gardens

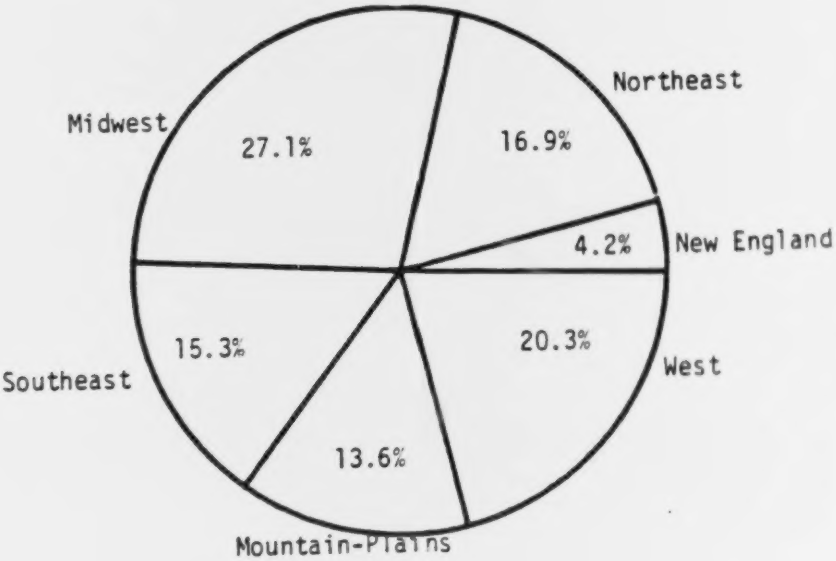
* large percentages identified their facilities' needs as being in areas of staffing (79.7%), space (60.2%), and additional library and research materials (59.3%)

* the majority ranked the number one need of the collections to be in the area of "exhibition/display", followed by environmental controls

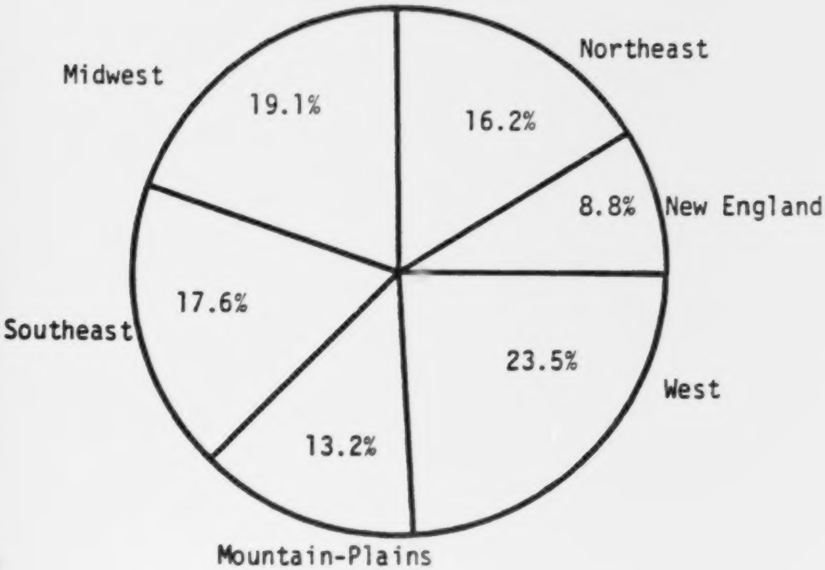
* the number one priority need of personnel associated with the collections is reported to be "additional financial support", followed by "better conservation training and awareness for staff"

The following charts represent geographic breakdowns of the facilities and individuals participating in this pilot study.

Conservation Facilities >



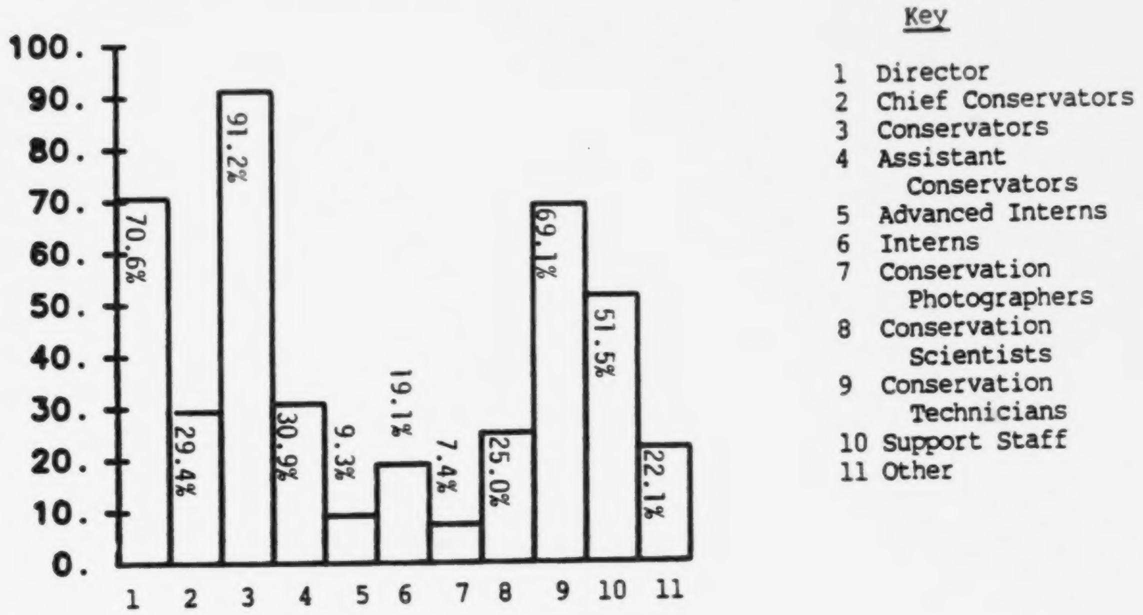
< Conservation Professionals



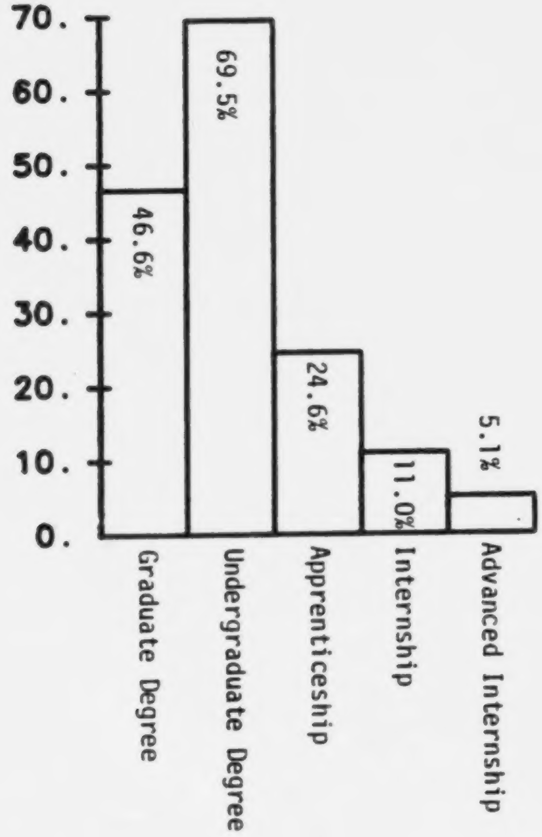
Further analysis of data reveals that the majority of participating zoological parks and aquariums (65.8%) are located in the west, mountain-plains and southeast; the majority of botanical gardens and arboreta (60.0%) are located in the northeast, midwest and New England regions.

Directors of conservation facilities provided staff profiles, using general titles that were defined in the questionnaires for ten types of employees. This information may be very useful as the conservation profession within the context of living collections continues to look for consensus in defining staff and professional activities that secure the long-term survival of the collections. The majority of facilities have directors, conservators, conservation technicians and support staff. The following graph illustrates the percentages of responses to all ten types of employees and to an additional category called "other". Staff analysis by type of institution demonstrates that zoological parks and aquariums report relatively high percentages of chief conservators (42.1%), assistant conservators (39.5%), and conservation scientists (31.6%). This same audience reports relatively low percentages of conservation interns (15.8%). Botanic gardens and arboreta report relatively high percentages of conservation interns (23.3). No botanic gardens reported conservation photographers on staff.

COLLECTIVE STAFF ANALYSIS OF ALL PARTICIPANTS



Individuals reported that their training for professional work in conservation may include academic work in related scientific areas, such as biology, horticulture, or zoology, or may be acquired "on-the-job". The following chart demonstrates percentages of response to methods of training that were listed on the "Conservation Professionals Questionnaire". Approximately 30% of the respondents acquired their training through methods not listed below.



Funds for training conservators of living collections are difficult to identify. Individuals who received financial support for their training reported that this support was acquired through their training institutions (40.7%) more often than through government (27.9%) or private sources (13.6%). Presumably, funding sources interested in conservation will be better able to contribute directly to the training of individuals who conserve living collections if these individuals are more easily identifiable and more clearly defined within the profession.

For purposes of analyzing staffing capabilities, directors of facilities were asked to identify areas of conservation specialization in which staff or contract personnel are employed, and areas in which staff or contract personnel are needed. The data demonstrates that conservators of living collections work as staff or contract personnel, usually conserving live animals or plants. A small proportion of respondents to both the "Facilities" and "Professionals" questionnaires reported conservation activities in the specialties of preserved animals and plants, as well as landscape features.

The following chart shows the percentages of facilities that report staff or contract personnel in each area of specialization (EXISTING PERSONNEL), as well as the percentage of facilities who report staff or contract needs in each area of specialization (REPORTED PERSONNEL NEEDS).

	EXISTING PERSONNEL (% of Facilities)	REPORTED PERSONNEL NEEDS (% of Facilities)
Botanic Gardens/Arboreta:		
animal, live	9.9%	0%
animal, preserved	3.3%	0%
landscape features	30.0%	26.7%
plants, live	100.0%	69.9%
plants, preserved	26.7%	16.6%
Zoological Parks/Aquariums:		
animal, live	100.0%	99.0%
animal, preserved	7.9%	5.3%
landscape features	28.9%	21.0%
plants, live	39.5%	40.8%

Directors of facilities report high percentages of need for several conservation specializations, e.g. plants for botanic gardens and animals for zoos. The collective data shows that 83.8% of all directors report that conservation professionals are available to be hired if additional positions are supported. Analysis of this response by type of institution demonstrates that a very high percentage of directors of zoos/aquariums (92.1%) affirm the availability of conservation professionals and a large majority of botanical garden directors agree (73.3%). Over four-fifths (83.9%) of individuals who responded to the "Professionals" questionnaire report that requests for their services have increased over the past five years.

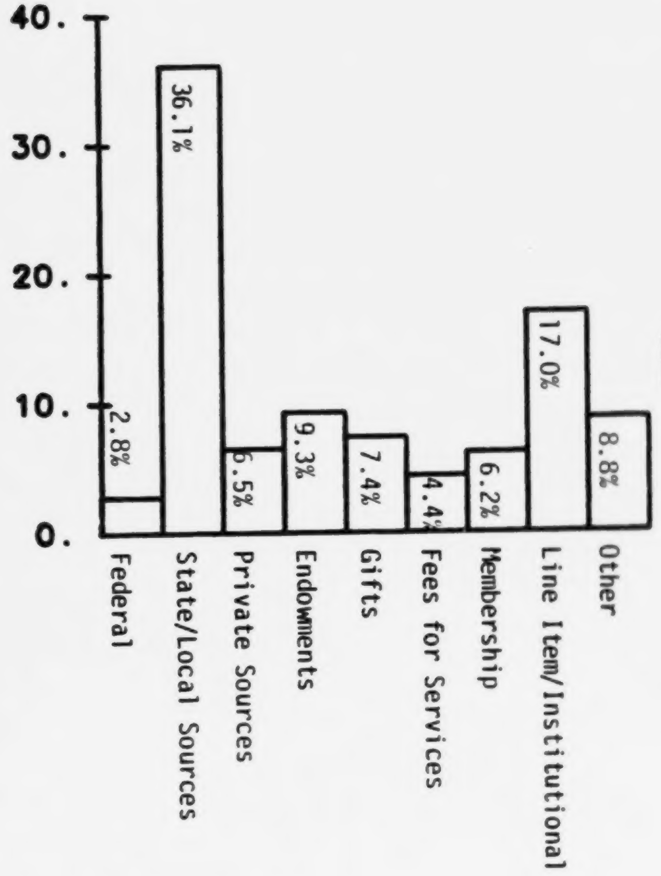
Analysis of both questionnaires shows that professional positions in conservation demand considerable time devoted to administration, curatorial responsibilities, and supervision of staff - leaving a smaller proportion of time available for research, examination, treatment, and preservation activities. This is partially due to the fact that the questionnaires were distributed to professionals in the field who are known as "leaders" and policy-makers in conservation, individuals who shoulder many management responsibilities in addition to their laboratory work.

Budget information was forthcoming from 83.8% of the participating conservation facilities. Conservation budgets are most meaningful when analyzed within the contexts of the institutional operating budgets. Budgets for conservation ranged from less than 5% to 100% of the institutional operating budgets. Directors of conservation for living collections rarely have "line items" in their budgets for conservation. Some (directors of zoos) regard all activities within their institutions as conservation; others estimate costs for activities within their institutions that are strict measures to assure the long-term survival of the collections. Interpretations of this issue vary greatly and demonstrate, more than any other single issue considered here, the lack of consensus within the field regarding what constitutes professional conservation activity within institutions caring for living collections.

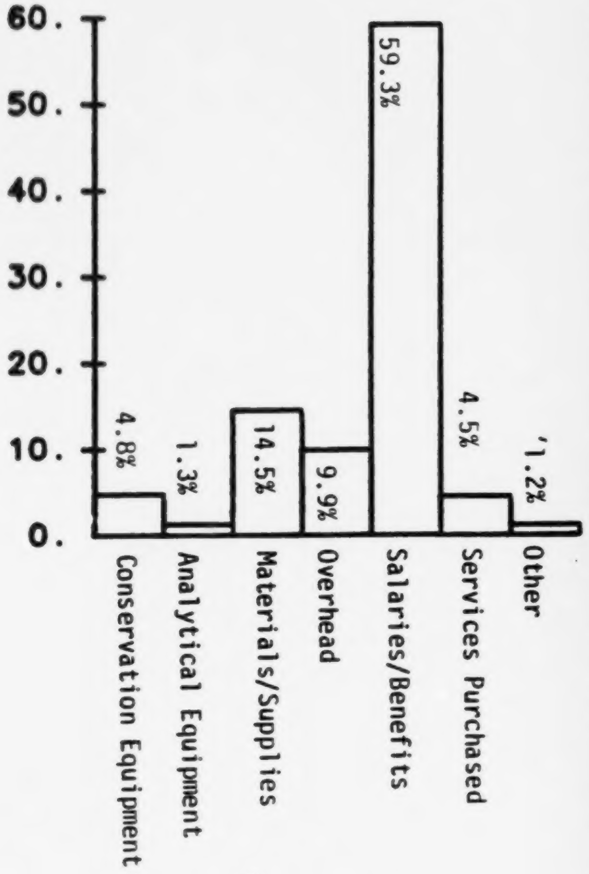
Analysis of data shows that institutional budgets, and percentages of operating budgets allocated to conservation, are usually smaller for botanical gardens than for zoos and aquariums. These results are not representative of the universe since all participating botanical gardens reported institutional budgets that are less than one million dollars. All conservation budgets for participating botanical gardens were less than $450,000.

Conservation facilities conserving living collections receive most of their income (53.1%) from state and local sources and from their host institutional budgets. As in the case of support for conservation training in the field, outside sources such as federal and private granting organizations make very small contributions to the facilities. Endowment income represents 19.5% of income for conservation in botanical gardens, but only 1.1% of income for conservation in zoos and aquariums. Private granting sources and gifts are slightly higher for conservation activities within botanical gardens (10% and 9.7% respectively) than for conservation within zoos and aquariums (3.7% and 5.5% respectively). An analysis of mean responses to sources of income for all conservation facilities follows.

Sources of Income



Expenses for Facilities



Institutional policies regarding the care of collections vary greatly among institutions housing these collections. Less than half of the participating directors of facilities and individual conservators report that conservation professionals have "decision-making roles" in determining policy about examination, accessioning and deaccessioning. However, when asked if their institutions require examination of a percentage of the collection on an annual basis, directors of facilities usually report in the affirmative (57.4%) and individual conservators usually report in the negative (61.9%). Selection of participants from these two audiences was based on professional expertise in conservation and does not reflect the total staff of any one facility. Percentages of the collections that are examined, regardless of institutional policy, are higher in zoos and aquariums than in botanical gardens. A majority (65.8%) of zoos and aquariums examine one-hundred percent of their collections on an annual basis; 30% of botanical gardens examine their entire holdings annually.

Educational activities in conservation vary greatly among professionals and facilities. A higher percentage of individuals who are employed by botanical gardens (38.2%) than by zoos/aquariums (19%) report "formal and structured" roles as educators. However, more botanical gardens (30%) than zoos/aquariums (15.8%) report not offering educational programs in conservation. On the average, zoos and aquariums offer more educational opportunities in conservation, particularly in areas of preparatory training, basic training and advanced training (no botanical gardens report programs in advanced training). In 1984, over 50% of the zoos and aquariums surveyed offered preparatory training, internships, programs for university students, and public advocacy programs for conservation.

Additional staff and space were ranked as high priority needs by directors of facilities and by individual professionals. Individual respondents reported priority needs for personnel in areas of additional financial support, and better conservation training and awareness among staff and institutional trustees. Professionals report that the greatest needs of the collections which they serve are in areas of "exhibition/display", environmental controls and documentation techniques.

Directors of facilities prioritized other needs of facilities, including equipment needs. The following represents the top five items listed among equipment as priority needs. These items, which were identified as the five greatest priority needs of major conservation and analytical equipment, are listed below and are followed by "current capacity" — the percentage of facilities which already have or have access to the equipment.

Priority Needs: Equipment (mean rankings of priority needs)	Current Capacity (% of Facilities that have or have access)
Conservation Equipment:	
1. photographic equipment	58.8%
2. binocular microscope	61.8%
3. tissue culture equipment	20.6%
4. spray equipment	44.1%
5. radiographic equipment	22.1%
Analytical Equipment:	
1. computer	38.2%
2. photographic equipment	36.8%
3. compound microscope	29.4%
4. electron microscope	10.3%
5. other (see questionnaire for listings in Appendix IV)	8.8%

Directors of all three types of facilities (arboreta, zoos and aquariums) report that priority needs for space are greatest for breeding and propagation activities. For zoos and aquariums, the second and third priority needs for space are for storage/holding facilities and conservation laboratories/equipment respectively. For botanical gardens, the second and third priority needs for space are for conservation laboratories/equipment and administration respectively.

APPENDIX I

CONSERVATION FACILITIES QUESTIONNAIRE

NON-LIVING COLLECTIONS

Answers to this questionnaire are provided in percentages of response to each question. Answers may not total 100% because percentages have been rounded to tenths of points, not all respondents answered every question, some questions allow for multiple responses, and some questions are analyzed according to mean responses.

The following analysis is based on the responses of directors of 52 conservation facilities that conserve non-living collections.

Section I. General Information

This section requests identifying information such as name, title, name of institution, business address, and geographic location. To protect the rights of privacy for respondents to the survey, only a small portion of this information was retained for presentation here. The analysis of this section includes only type of institution and geographic location.

Type of Institution	Percentage Responding
Museum	78.8%
Regional Laboratory	17.3%
Library	1.9%
University	1.9%

Geographic Location	Percentage Responding
New England	21.2%
Northeast	34.6%
Midwest	15.7%
Southeast	5.7%
Mountain-Plains	9.6%
West	13.5%

Section II. Full-Time-Equivalent Employees (FTE's) in conservation on staff.

Type of Employee	Percentage Responding	Range of Responses	Mean Response
A Director of Conservation	50%	0.5 - 3.0	1
B. Chief Conservator/s	57.7%	0.5 - 4.0	1.25
C. Conservator/s	63.5%	1.0 - 11.0	3.26
D. Assistant Conservator/s	57.7%	1.0 - 10.0	2.13
E. Fellow/Advanced Intern/ Master Apprentice	40.4%	0.1 - 6.0	1.84
F. Conservation Intern/s	42.3%	.25 - 5.0	1.55
G. Conservation Photographer/s	13.5%	1.0 - 2.0	1.14
H. Conservation Scientist/s	21.2%	1.0 - 13.0	2.75
I. Conservation Technician/s	55.8%	.5 - 9.0	2.17
J. Support Staff	53.8%	.2 - 7.0	1.90
K. Other	32.7%	.1 - 10.0	2.21

Based on the results of Section II, total numbers of employees were calculated as follows:

Number of FTE's	Percentage Responding
.1 - 5	42.3%
5.1 - 10	21.2%
10.1 - 15	9.6%
15.1 - 20	15.4%
over 20	9.6%
	1.9% no response

The following types of full-time employees were listed under the category "Other":

Administrators
Apprentices
Basketry Technique Analyst
Conservation Assistant
Conservation Fellow
Conservation Trainee
Consultant
Contract Conservator

Education Staff
Exhibition Specialist
Frame Conservator
Fundraiser
Installers
Matters/framers
Microfilming Staff
Preparators
Research Associates
Secretaries/clerical

Section III. Areas of specialization in which full-time-equivalent employees serve, or are needed to serve, on staff or on contract. Numbers listed reflect percentages of respondents acknowledging categories.

Area	ON STAFF(%)		ON CONTRACT(%)		TOTAL(%)	
	Have	Need	Have	Need	Have	Need
1. aeronautics, include space/airplanes	0	0	0	0	0	0
2. animal, live	1.9	0	0	0	1.9	0
3. animal, preserved	3.8	1.9	1.9	1.9	5.7	3.8
4. anthropological, ethnographic	28.8	23.1	3.8	7.7	32.6	30.8
5. archaeological	30.8	23.1	1.9	7.7	32.7	30.8
6. books	11.5	23.1	3.8	4.8	15.3	27.9
7. ceramics, glass	34.6	21.2	5.7	5.8	40.3	27.0
8. documents, manuscripts, maps	19.2	17.3	7.7	3.8	26.9	21.1
9. film, except photographs	3.8	5.8	0	3.8	3.8	9.6
10. furniture	28.8	17.3	3.8	7.7	32.6	25.0
11. geological, mineral, paleontological	5.8	3.8	0	0	5.8	3.8
12. historic houses/ buildings	7.7	7.7	1.9	1.9	9.6	9.6
13. historic sites	0	0	1.9	0	1.9	0
14. horological	3.8	1.9	0	1.9	3.8	3.8

Area	ON STAFF(%)		ON CONTRACT(%)		TOTAL(%)	
	Have	Need	Have	Need	Have	Need
15. landscape features	0	0	0	0	0	0
16. machinery	3.8	3.8	1.9	1.9	5.7	5.7
17. maritime and historic ships	0	1.9	0	3.8	0	5.7
18. medical, dental, health and pharmacological	1.9	1.9	0	3.8	1.9	5.7
19. medals	3.8	3.8	0	3.8	3.8	7.6
20. military	9.6	1.9	0	5.8	9.6	7.7
21. money and numismatics	0	1.9	0	1.9	0	3.8
22. musical instruments	0	1.9	3.8	6.7	3.8	8.6
23. paintings	46.2	25.0	13.5	15.4	59.7	40.4
24. philatelical	1.9	1.9	0	1.9	1.9	3.8
25. photography, negatives	7.7	13.5	0	5.8	7.7	19.3
26. photography, prints	7.7	23.1	1.9	11.5	9.6	34.6
27. physical science objects	3.8	0	1.9	0	5.7	0
28. plants, live	5.8	1.9	0	0	5.8	1.9
29. plants, preserved	7.7	5.8	1.9	5.8	9.6	11.6
30. sculpture, indoor	26.9	17.3	9.6	15.4	36.5	32.7
31. sculpture, outdoor	21.2	17.3	1.9	3.8	23.1	21.1
32. textiles and costumes	30.8	30.8	13.5	9.6	44.3	40.4
33. tools	0	5.8	3.8	5.8	3.8	11.6
34. toys and dolls	0	1.9	0	1.9	0	3.8
35. transportation, exclude airplanes	3.8	0	0	3.8	3.8	3.8
36. works of art on paper	38.5	38.5	13.5	15.4	52.0	53.9
37. other	23.1	19.2	0	0	23.1	19.2

The following areas of employees specialization were listed as "Other".

- Administrative
- Art History
- Collections Manager
- Conservation Scientists
- Conservators
- Decorative Arts
- Exhibits
- Folk Art Objects
- Frame Conservators
- General Technician
- Matters/framers
- Metals
- Objects (generalists)
- Physical Science
- Plastic & Modern Synthetics
- Support Staff

If sources are (or become) available to support additional staff positions, are conservation professionals available to be hired?

73.1 Yes   19.2 No   7.7 No answer

Section IV. Analysis of Time spent by collective conservation staff.

Mean Responses	Activity
14.2%	A. Administration
5.9%	B. Curatorial Activities Related to Conservation
10.9%	C. Examination
4.8%	D. Professional Consultation
2.9%	E. Personal Professional Development
3.1%	F. Publication
5.7%	G. Research
6.6%	H. Supervision of Staff
7.2%	I. Teaching
36.4%	J. Treatment
7.1%	K. Preservation Activities
.4%	L. Other

The following activities were listed as "Other":

Inquiries from public
Ordering materials
Other organizations
Set up of lab
Voluntary work

Comment: depends on person

Section V. Budget

A. Institutional Operating Budgets for FY 1984.

78.8% responded

Mean: $16,472,473

Range of Responses: $50,000 - 300,000,000

Institutional Budget Ranges	Percentages Responding
under $75,000	1.9%
$75,000 - $149,999	3.8%
$150,000 - $599,999	15.4%
$600,000 - $1,000,000	30.8%
over $1,000,000	48.1%

B. FY 1984 Operating Budgets for Conservation.

78.8% responded

Mean: $285,319

Range of Responses: $1,000 - $1,550,000

Conservation Budget Ranges	Percentages Responding
under $50,000	13.5%
$50,001 - $75,000	9.6%
$75,001 - $150,000	19.2%
$150,001 - $600,000	25.0%
over $600,000	32.7%

Based on these reported budgets, an analysis of percentages of operating budgets allocated to conservation follows.

% of Institutional Budgets Going to Conservation	Percentages Responding
5% or less	56.1%
6% - 25%	24.4%
26% - 75%	2.4%
76% - 100%	17.1%

C. Income for Conservation Facility.

Mean Responses	Source
18.9%	1. federal sources
11.7%	2. state/local sources
6.5%	3. private granting sources
5.5%	4. endowment
1.6%	5. gifts
14.8%	6. fees for services
2.1%	7. membership fees
30.4%	8. line item of host institution
7.2%	9. other

The following were listed as "Other" categories of income:

Conservation Technicians
Foundation Funds
Funds
Interest
Museum Operating
Private grants
University
Volunteer

D. Expenses for Conservation Facility.

Mean Responses	Source
6.4%	1. conservation equipment
3.2%	2. analytical equipment
15.3%	3. materials/supplies
5.9%	4. overhead
60.5%	5. salaries/benefits
4.6%	6. services purchased
7.2%	7. other

The following items were listed as "Other" expenses:

- Books
- Conference Fees
- Education
- Insurance
- Objects Transportation
- Phone
- Professional Development
- Research
- Salaries
- Special Projects
- Travel
- Volunteer

Section VI. Conservation Facilities

A. Organizational Structure of Facility.

Percentage Responding	Structure
55.8%	in-house facility serving host institution ONLY
21.2%	in-house facility serving host institution and OTHERS
11.5%	regional (cooperative) conservation center
11.5%	other

"Institution with conservation treatment facilities organized on a Not-for-profit basis" was listed as an "Other" type of organizational structure.

B. Size of Facility.

1. indoor square footage 92.3%

a.	under 600	8.3%
b.	601 - 1200	14.6%
c.	1201 - 2000	14.6%
d.	over 2000	62.5%
		7.7% (did not respond)

2. outdoor acreage 32.7%

a.	under 5	15.4%
b.	6 - 10	5.8%
c.	11 - 25	0.0%
d.	26 - 50	3.8%
e.	51 - 100	0.0%
f.	101 - 200	1.9%
g.	over 200	5.8%
		67.3% (did not respond)

C. Major Pieces of Conservation Equipment. Numbers reflect percentages of respondents acknowledging category.

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
1. abrasive cleaning equipment	49.9	50.1	3.8	21.2
2. balance	73.1	26.9	5.7	23.0
3. cryogenic equipment	1.9	98.1	0.0	5.8
4. environmental testing chamber	24.9	75.1	15.3	30.8
5. flame-resistant solvent storage	80.8	19.2	1.9	9.6
6. fume hood	84.6	15.4	5.7	34.5
7. IR vidicon	28.8	71.2	15.4	21.1
8. laser	1.9	98.1	13.5	3.8
9. microscope, binocular	80.8	19.2	11.5	30.8
10. photographic equipment	84.6	15.4	5.8	19.2
11. spray equipment	55.8	44.2	11.5	15.3
12. tissue culture equipment	0.0	100.0	1.9	0.0
13. vacuum cold table	28.8	71.2	9.6	26.9
14. vacuum hot table	51.9	48.1	11.5	17.3
15. welding equipment	17.2	82.3	30.8	5.8
16. radiographic equipment	57.7	42.3	21.1	19.2
17. other	25.0	75.0	0.0	11.5

The following items were listed as "Other" major pieces of equipment:

- Deionized Water System
- Driclave Vacuum
- Dyeing Equipment
- Easels
- Fire Suppression System
- Lab Ovens
- Metalworking Machinery
- Paper Lab Sink
- Polarizing Microscope
- Steam & Drycleaning
- Still
- Suction Table
- Textile Sink
- "Trunk" Fume Exhaust
- Ultrasonic Dental Tool
- Wash Table
- Water Distiller
- Wood-working Equipment

D. Major Pieces of Analytical Equipment. Numbers listed reflect percentages of respondents acknowledging category.

Item	Have(%)	Do Not Have(%)	Have Access(%)	Need(%)
1. atomic absorption	1.9	98.1	15.4	9.6
2. computer	25.0	75.0	19.2	44.2
3. emission spectrograph	5.8	94.2	25.0	7.7
4. energy dispersive spectrometer	1.9	98.1	19.2	7.7
5. FTIR spectrometer	1.9	98.1	21.2	11.2
6. gas chromatograph	9.6	90.4	23.1	15.4
7. IR spectrometer	13.4	86.6	21.1	13.5
8. mass spectrometer	3.8	96.2	21.2	7.7
9. microscope, compound	34.6	65.4	13.4	3.8
10. microscope, electron	3.8	96.2	30.7	15.4
11. microscope, reflecting	32.7	67.3	17.3	11.5
12. microscope, polarizing	67.3	32.7	7.7	17.3
13. nuclear reactor	1.9	98.1	15.4	0.0
14. photographic equipment	69.2	30.8	3.8	19.2

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
15. thermoluminescence	9.6	90.4	25.0	0.0
16. x-ray diffraction	11.5	88.5	28.8	13.5
17. x-ray flourescence	15.3	84.6	25.0	17.3
18. other	11.2	88.5	1.9	9.6

The following items were listed as "Other" pieces of Analytical Equipment:

Adequate Analytical Equipment
Balance
Climate Machine
Comparison Microscope
Fadometer
Flourescence Analyser
Hot Stage
HPLC
Incident Light Meter
IR Vidicon
Kevex x-ray
Microtome
NMR
Ovens
Radiological Dating
Recording Hygrothermograph
Tensile/Compression Testing Machine
UV Light Monitor
UV Spectrophotometer
UV Shortwave Lamp
Vidicon Enhancement

VII. Care of Collections

A. Do you have an institutional policy requiring that a certain percentage of the collection be examined each year?

Yes 11.5%
No 75.0%

13.4% no response

B. What percentage of your collection is examined each year?

10.0% Median Answer

C. Who determines policy regarding what needs to be examined?

76.9% 1. conservation staff
78.8% 2. curatorial staff
25.0% 3. museum (institutional) administrative staff
21.2% 4. other

The following were listed as "Other" determiners of examination policy:

Exhibit Organizers
Director
Loan requests
Registrar

D. Who determines policy regarding accessioning and deaccessioning?

34.6% 1. conservation staff
75.0% 2. curatorial staff
53.8% 3. museum (institutional) administrative staff
34.6% 4. other

The following were listed as "Other" determiners of accessioning and deaccessioning:

Chief Curator
Collections Committee
Collections Management Staff
Director
Education Office
Library
Museum Collection Board
Policy Committee
Registrar
Trustees

VIII. Educational Activities in Conservation. Numbers listed reflect percentages of respondents acknowledging category.

Activity	1978	1979	1980	1981	1982	1983	1984
A. preparatory training	34.6	40.4	42.3	46.2	48.1	51.9	50.0
B. basic training	19.2	17.3	23.1	25.0	28.8	30.8	25.0
C. internships	26.9	30.8	34.6	44.2	46.2	53.8	46.2
D. advanced training	11.5	19.2	19.2	21.2	23.1	26.9	32.7
E. programs for university students	17.3	21.2	25.0	30.8	30.8	32.7	32.7
F. programs for other institutional personnel	15.4	21.2	23.1	25.0	32.7	32.7	34.6
G. workshops/seminars	23.1	28.8	28.8	36.5	46.2	50.0	50.0
H. consulting services	34.6	42.3	46.2	51.9	55.8	57.7	59.6
I. clients	26.9	26.9	26.9	26.9	25.0	25.0	26.9
J. programs for general public (advocacy)	26.9	28.8	30.8	34.6	32.7	40.4	40.4
K. other	5.8	5.8	7.7	5.8	5.8	11.5	9.6

Education activities listed as "Other":

Lectures for affiliate groups
Lectures at colleges
Television documentary
Volunteers

L. Facilities which have not offered educational programs in conservation.

5.8%

IX. This final section deals with priority NEEDS of conservation facilities.

A. The following were ranked from 1 to 7 to signify the needs in general areas; 1 signifying the greatest need and 7 the least.

7 1. administrative organization (or reorganization) of facility
4 2. equipment (conservation)
3 3. equipment (analytical)
6 4. greater voice for conservation in museum policies
2 5. space
1 6. staffing
5 7. other

The following areas were listed as "Other" priority needs:

Additional Training
Adjacency to Loading Dock/Storage
Architectural Redesign and Relocation
Better Salaries
Conservation Library
Conservators
Consistent Funding @ Clients
Data Management
Facility Renovation
More Money
New Facility
Outside Consultants
Secretary
Space with Natural Light
Subsidy for Public Service
Time to Solve Conservation Problems

B. This part expands on Part A of this section, identifying priority needs in general areas.

1. Greater Voice for Conservation in Museum Policies

The following are ranked according to need from 1 to 8; 1 signifying the greatest need and 8 the least.

6 a. documentation
1 b. environmental control
2 c. exhibition/displays

4 d. loans/acquisitions
5 e. packing/handling
3 f. storage/holding
8 g. grounds supervision and maintenance
7 h. security

2. Equipment (Conservation)

The following are ranked according to need from 1 to 5; 1 signifying the greatest need and 5 the least.

1 (m.) vacuum cold table
(tie) 1 (p.) radiographic equipment
2 (j.) photographic equipment
3 (d.) environmental testing chamber
4 (i.) binocular microscope
5 (f.) fume hood

Also showing significant priority in conservation needs are:

(a.) abrasive cleaning equipment
(b.) balance
(g.) IR Vidicon

The following equipment were listed as "Other" conservation equipment needed:

climate control equipment
comparison microscope
computer
conductivity meter
cross-sectioning equipment
dyeing equipment
fiberoptics for microscope
fume exhaust
fumigation vacuum chamber
fire distributing system
IR spectrophotometer
jacketed sink
library material
observer's tube for microscope
oven
ph meter
security equipment
self-correcting Selectric typewriter
storage equipment

suction table
technical reference books
t.v. monitor
water purification system
wood & metal lathes

3. Equipment (Analytical)

The following are ranked according to need from 1 to 5; 1 signifying the greatest need and 5 the least.

1 (b.) computer
2 (p.) x-ray diffraction
3 (q.) x-ray flourescence
4 (j.) electron microscope
(tie) 4 (f.) gas chromatograph
5 (e.) FTIR spectrometer

The following equipment was listed as "Other" analytical equipment needed.

analyzer
hot stage
ICP
Kevex x-ray flourescence
microscope
microtome
tensile/compression testing machine

4. Space for Conservation Activities

The following are ranked according to need from 1 to 8; 1 signifying the greatest need and 8 the least.

5 a. adminstration
1 b. conservation laboratories/supplies
6 c. packing/packing equipment/carpentry
4 d. photography
3 e. scientific examination equipment
2 f. storage/holding
8 g. breeding/propogation
7 h. other

The following were listed as "Other" conservation activities needing space:

additional space for comparative examination
freeze drying
fumigation & quarantine
library
microfilming
staff
treatment/examination facilities

APPENDIX II

PRIVATE FACILITIES

NON-LIVING COLLECTIONS

THE FOLLOWING SECTION OF THE CONSERVATION PROFESSIONALS QUESTIONNAIRE (SECTION VIII) WAS COMPLETED ONLY BY INDIVIDUALS WHO MANAGE PRIVATE CONSERVATION FACILITIES. THIS INFORMATION IS SUPPLEMENTED WITH RESPONSES FROM THIS AUDIENCE TO QUESTIONS INCLUDED IN SECTION VII: NEEDS.

125 of the 471 conservation professionals participating in this study responded to this section. This means that approximately 26.5% of participating conservation professionals are either in private business exclusively on a full or part time basis, or supplement their incomes from institutional employment with income from their own conservation facilities. Answers to this questionnaire are provided in percentages of response to each question. Answers may not total 100% because percentages have been rounded to the tenths of points, not all respondents answered every question, some questions allow for multiple responses, and some questions are analyzed according to mean responses. All answers are based on 125 responses.

VIII. Conservation Facilities

A. Size of Facility

100 % 1. indoor square footage

43.2% a. 0 - 600
33.6% b. 601 - 1200
10.4% c. 1201 - 2000
12.8% d. over 2000

47.2% 2. outdoor acreage

42.2% a. 0 - 5
3.2% b. 6 - 10
- % c. 11 - 25
.8% d. 26 - 50
.8% e. 51 - 100
- % f. 101 - 200
- % g. over 2000
52.8% (did not respond)

B. Personnel - Number of Full-Time-Employees

Conservation Professional/s	Percentage Responding	Mean Response
1. conservator/s	85.6%	1.2
2. conservation scientist/s	5.6%	.8
3. conservation technician/s	25.6%	1.4
4. conservation intern/s	11.2%	1.0
5. support staff	21.6%	1.9
6. other	9.6%	.9

Based on the above results, total numbers of employees were calculated as follows:

Number of FTE's	Percentage Responding
.5 - 1.0	48.0%
1.1 - 2.0	22.4%
2.1 - 3.0	8.8%
3.1 - 4.0	1.6%
4.1 - 5.0	4.8%
5.1 -10.0	7.2%
10.1 -15.0	1.6%
	5.6% no response

4. If resources are (or become) available to support additional staff positions, are conservation professionals available to be hired?

53.6% Yes 31.2% No 15.2% no response

C. Budget

1. Provide your operating budget for fiscal year 1984, excluding any large, one-time capital expenditures that may inflate real budget.

82.4% of private facilities responded

mean response: $35,344

range of responses: $2,000 - $200,000

budget ranges	percentage of facilities
under $10,000	13.6%
$10,000 - $19,999	20.0%
$20,000 - $29,999	16.8%
$30,000 - $39,999	8.0%
$40,000 - $49,999	4.0%
$50,000 - $59,999	1.6%
$60,000 - $69,999	7.2%
$70,000 - $79,999	1.6%
$80,000 - $89,999	1.6%
$90,000 - $99,999	1.6%
$100,000 - $149,999	4.8%
$150,000 - $200,000	1.6%

2. Indicate percentages of sources of operating budget for each item listed that may be applicable, using the category "other" to supplement the list. Enter N/A if not applicable.

Mean Responses	Sources
2.0%	a. federal sources
.5%	b. state/local sources
1.3%	c. private granting sources
.8%	d. endowment
.7%	e. gifts
89.0%	f. fees for services
4.6%	g. other

3. Indicate percentages of operating budget for each item listed that may be applicable as expenses, using the category "other" to supplement the list.

Mean Responses	Sources
11.8%	a. conservation equipment
21.6%	b. materials/supplies
23.0%	c. overhead
43.4%	d. salaries/benefits
2.6%	e. scientific equipment
9.1%	f. services purchased
6.6%	g. other

C. Major Pieces of Conservation Equipment.

Item	Have(%)	Do Not Have(%)	Have Access(%)	Need(%)
1. abrasive cleaning equipment	16.0%	84.0%	7.2%	9.6%
2. balance	16.0%	84.0%	12.8%	8.8%
3. cryogenic equipment	.8%	99.2%	3.2%	-
4. environmental testing chamber	4.8%	95.2%	8.0%	8.0%
5. flame-resistant solvent storage	32.8%	67.2%	6.4%	18.4%
6. fume hood	24.8%	75.2%	11.2%	20.8%
7. IR vidicon	2.4%	97.6%	8.0%	6.4%
8. laser	3.2%	96.8%	4.8%	1.6%
9. microscope, binocular	35.2%	64.8%	15.2%	23.2%
10. photographic equipment	60.8%	39.2%	5.6%	11.2%
11. spray equipment	46.4%	53.6%	5.6%	6.4%
12. tissue culture equipment	2.4%	97.6%	2.4%	1.6%
13. vacuum cold table	13.6%	86.4%	3.2%	12.0%
14. vacuum hot table	24.8%	75.2%	8.0%	4.8%
15. welding equipment	12.0%	88.0%	8.8%	3.2%
16. radiographic equipment	4.0%	96.0%	15.2%	9.6%
17. other	6.4%	93.6%	2.4%	3.2%

D. Major Pieces of Analytical Equipment

Item	Have(%)	Do Not Have(%)	Have Access(%)	Need(%)
1. atomic absorption	2.4%	97.6%	5.6%	2.4%
2. computer	13.6%	86.4%	11.2%	14.4%
3. emission spectrograph	1.6%	98.4%	9.6%	3.2%
4. energy dispersive spectrometer	.8%	99.2%	5.6%	1.6%
5. FTIR spectrometer	.8%	99.2%	4.8%	.8%
6. gas chromatograph	1.6%	98.4%	10.4%	3.2%
7. IR spectrometer	.8%	99.2%	12.8%	4.0%
8. mass spectrometer	.8%	99.2%	8.8%	2.4%
9. microscope, compound	5.6%	94.4%	11.2%	4.0%
10. microscope, electron	.8%	99.2%	16.0%	2.4%

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
11. microscope, reflecting	7.2%	92.8%	12.8%	4.8%
12. microscope, polarizing	6.4%	93.6%	16.0%	9.6%
13. nuclear reactor	.8%	99.2%	2.4%	1.6%
14. photographic equipment	30.4%	69.6%	6.4%	6.4%
15. thermoluminescence	3.2%	96.8%	9.6%	2.4%
16. x-ray diffraction	-	100.0%	19.2%	1.6%
17. x-ray flourescence	1.6%	98.4%	16.0%	5.6%
18. other	.8%	99.2%	.8%	-

The following information was taken from the responses of conservators in private practice to "Section VII: Needs" of the "Conservation Professionals Questionnaire".

VII. Needs

A. Please identify your facility's conservation-related needs:

Percentage Responding	Need
70.4%	1. access to additional conservation information
52.8%	2. additional analytical (scientific) equipment
68.0%	3. additional conservation equipment
54.4%	4. additional library/research materials
32.8%	5. additional materials/supplies
48.8%	6. additional staff
30.4%	7. additional space
23.2%	8. computer equipment
11.2%	9. other

B. Please identify priority needs of the collections you serve.

The following were ranked from 1 to 8; 1 signifying the respondents greatest need and 8 signifying the least.

Rank	Collections' Needs
4	1. documentation techniques
1	2. environmental control
6	3. exhibition/display
3	4. expertise in proper handling
7	5. expertise in proper packing
8	6. expertise in proper shipping
2	7. storage/holding
5	8. other

D. Please identify priority needs of the personnel associated with the collections you serve.

The following were ranked from 1 to 8; 1 signifying the greatest need and 8 signifying the least.

Rank	Personnel Needs
4	1. access to conservation information
6	2. access to conservation specialists
7	3. access to conservation scientists and other research specialists
1	4. additional financial support
3	5. better conservation training and awareness for staff
2	6. conservation awareness among institutional administrators
5	7. conservation awareness among institutional trustees
8	8. other

APPENDIX III

CONSERVATION PROFESSIONALS QUESTIONNAIRE

NON-LIVING COLLECTIONS

Answers to this questionnaire are provided in percentages of response to each question. Answers may not total 100% because percentages have been rounded to tenths of points, not all respondents answered every question, some questions allow for multiple responses, and some questions are analyzed according to mean responses.

The following is based on the responses of 471 professional conservators of non-living collections.

Section I. General Information

A. Geographic Location

13.7%	1.	New England
40.6%	2.	Northeast
14.4%	3.	Midwest
7.1%	4.	Southeast
7.5%	5.	Mountain-Plains
16.7%	6.	West

B. Type of employment and percentage of professional time spent in each category marked.

Percentage Responding	Mean Response		Type of Employment
0.0%	-	1.	Aquarium
0.0%	-	2.	Arboretum/Botanic Garden
8.2%	4.47%	3.	Historic Society/Historic Site
12.1%	9.33%	4.	Library
48.4%	37.88%	5.	Museum (include university museums) The majority of respondents to the museum category did not specify what type of museum.
11.4%	10.11%	6.	Regional (cooperative) Conservation Centers
42.2%	29.63%	7.	Private Practice/Contract Veterinarian
5.5%	3.38%	8.	University (exclude university museums)
0.0%	-	9.	Zoo
5.5%	4.24%	10.	Other

Percentage responding refers to the percentage of audience acknowledging category of employment. Mean response refers to the mean answer regarding the percentage of professional time that is spent in category of employment.

The following were listed as "other" types of institutions:

church
chemical company with laboratory
conservation association
consultant
department of the interior
government archaeological laboratory
materials research laboratory
museum regional laboratory work
non-profit training institute
publication
research
school
state facility

C. Position Held.

Percentage Responding	Position
20.4%	1. Director of Facility
27.8%	2. Chief Conservator
43.7%	3. Conservator
14.0%	4. Assistant Conservator
7.2%	5. Conservation Technician
7.6%	6. Conservation Scientist
14.4%	7. Conservation Educator

D. Professional Titles. Of the 115 answers provided, the following were cited most frequently.

Titles	Approximate Percentages Responding
Conservator	23%
Conservator of Paintings	7%
Assistant Conservator	6%
Paper Conservator	5%
Director	4%

Position is Full-Time	86.0%
Position is Part-Time	10.2%
no response	3.8%

E. Length of Time in Conservation.

Mean Response	Range of Response	
5.91	.08-50.00	1. Years in Present Position
6.23	.10-41.00	2. Years in Practice before Present Position

3. Total Length of Time in Conservation

Percentage Responding	Total Time
24.6%	a. less than 5 years
33.8%	b. 6 - 10 years
21.2%	c. 11 - 15 years
7.6%	d. 16 - 20 years
10.6%	e. more than 20 years
2.1%	(no response)

Section II. Educational Background in Conservation

A. Source/s of Education.

1. Advanced degree

56.7% Yes 41.4% No 1.9% no response

Major Areas of Study	Numbers Responding	% of Adv. Degrees
Paintings Conservation	81	30%
Ethnographic/Archaeological Conservation	32	12%
Conservation of Works of Art on Paper	30	11%
Textiles	24	9%
Art History	19	7%
		69%

Other areas of study listed:

American History, Anthropology, Antique Furniture/Easel Painting, Archaeology, Architectural Conservation, Archival Administration, Artifacts Conservation, Biochemistry, Business Management, Chemistry, Conservation, Conservation Education, Conservation of 3-D Artifacts, Criticism of Art, Decorative Arts, European History, Environmental Studies, Fine Arts, Frescos/Easel Painting, Furniture Conservation, Geology, Glass, Graphic Arts, Historical Architecture, History, History of Science, History of Technology, Library Administration, Library/Archives, Library Conservation, Library Science, Materials Science, Museology, Museum Studies, Nuclear Engineering, Objects, Panel/Canvas Painting, Paper/Photographs, Physical Chemistry, Physics, Polychrome Sculpture, Polychrome Wood/Gilding, Printmaking, Psychology, Special Collections Administration, Technical Journalism, Wood Technology

Year of Graduation: range - 1917 to 1985

Largest frequencies begin in 1966 with the greatest concentrations from 1974 to 1984.

2. Undergraduate degree

59.7% Yes   37.6% No   2.7% no response

Major Areas of Study	Numbers Responding	% of Underg. Degrees
Art History	134	48%
Studio Arts	46	16%
Fine Arts	28	10%
Chemistry	25	9%
Anthropology	18	6%
		89%

Other areas of study listed:

Advertising Arts, American Material Culture, American Studies, Apparel Design, Ancient Near Eastern Languages and Cultures, Archaeology, Architectural Conservation, Architecture, Astronomy, Art Education, Biochemistry, Bookbinding, Ceramics, Chemical Engineering, Chinese Language and Literature, Classics, Commercial Design, Conservation, Decorative Arts, Design/Illustration, Engineering, English, Ethnology, European History, French, Furniture Conservation, General Science, Geography, Geology, Graphic Arts, History, History of Architecture, Home Economics, Languages/Linguistics, Library Science, Materials

Science, Museum Studies, Photography, Physics, Prehispanic Ceramics, Printmaking, Russian Languages and Literature, Secondary Education, Theology, Visual Arts, Wood Technology, Woodworking/Furniture Design

Year of Graduation: range - 1917 to 1983

Largest frequencies begin in the early 1960's, with the greatest concentrations from 1967 to 1978.

3. Apprenticeship/s

61.4% Yes 35.0% No 3.6% no response

Number of Apprenticeships Served:

Mean Response: 1.59

Range of Responses: 1 - 6

Number of Months Served Cumulatively:

Mean Response: 29.68

Range of Responses: 2 - 222

4. Internship/s

42.7% Yes 53.1% No 4.2% no response

Number of Internships Served:

Mean Response: 1.91

Range of Responses: 1 - 20

Number of Months Served Cumulatively:

Mean Response: 12.62

Range of Responses: 1 - 50

5. Advanced Internship/s or Post-graduate Fellowship/s

20.0% Yes 71.5% No 8.5% no response

Number of Advanced Internships Served:

Mean Response: 2.04

Range of Responses: 1 - 20

Number of Months Served Cumulatively:

Mean Response: 12.78

Range of Response: 1 - 40

B. Funding for Training in Conservation

1. Federal Sources:

Percentage Responding	Source
11.2%	a. National Endowment for the Arts
1.9%	b. National Endowment for the Humanities
7.2%	c. National Museum Act
1.1%	d. National Science Foundation
11.9%	e. Other

The following "other federal sources" were listed.

U.S. sources:

C.E.T.A.
Employer (U.S. Government)
Federal Government Training Funds
Fulbright
G.I. Bill
Guaranteed Student Loans
Institute of Museum Services
National Direct Student Loan
National Historical Publications and Records Commission
National Park Service
National Student Defense Loan
Office of Nuclear Waste Investigations (NASA)
Smithsonian Institution
Smithsonian Visiting Research Fellowship
UNESCO, OAS
U.S. Department of Education
Youth Manpower

foreign sources:

Austria - Austrian National Arts Council
Belgium - Federal Government
Canada - Canadian Museum Association
National Museums
Denmark - Marshall Fellowship (Danish)
Germany - Cultural Ministry
Thussey Fellowship
Great Britain - British Museum
Courtauld Institute of Art
Education Authority
Italy - Nationalized Education System
Poland - Federal Government

2. State/Local Sources: Seven (7%) percent acknowledged receipt of state/local funding for training. The following sources were listed.

sources in the U.S.:

Audubon Society
California State University Student Association, Fullerton
California State Internship
C.E.T.A. state funds
Cooperstown Summer Work Projects, Cooperstown, NY
Employing Institution
Governor's Scholarship
Grants
Metropolitan Museum of Art
Missouri State Endowment for the Humanities
New York Regents
New York State Tuition Program
New York University System
Utah State Government, Division of State History
Western Arts Council
Wisconsin State Historical Society

foreign sources:

Canada - Ontario
Queen's University
Germany - Municipal Government of Dresden

3. Private Sources:

Percentage Responding	Source
5.1 %	a. Kress Foundation
8.5 %	b. Mellon Foundation
2.5 %	c. Rockefeller Foundations
14.2 %	d. Other

The following other sources of private funding were listed.

Amerind Foundation, Inc.
Anderson Foundation
B. Rabin Fellowship
Chicago Intercollegiate Council
Chicago - School of the Art Institute
Cooperstown Conservation Loan Fund
Council on Library Resources
Dewitt Wallace Gallery Fund, Colonial Williamsburg
Ford Foundation
Friends of the Dallas Public Library
Friends of French Art
George F. Marshall Fund
Georgia O'Keefe
Gladys Delmas Foundation
Hebrew Technical Fellowships
Huntington Library Endowment
ICCROM
J. Paul Getty Museum
Johns Hopkins University
Kosciuszko Foundation
Lindley Foundation
Lotta B. Crabtree Fund
Metropolitan Museum Fellowships
New York Historical Association
Nordson Foundation
R.R. Donnelley and Sons Co.
Rotary International Foundation
Thomas Jefferson Foundation Scholar
Virginia Museum of Fine Arts
Walter B. Ford Professional Development Grant

Personal and family sources, private loans, paid apprenticeships, and research corporations were also mentioned.

4. Were funds acquired through your training institution?

52.2 % Yes   22.9 % No   24.8 % no response

% Responding	Type of Institutional Fund
20.4 %	a. fellowships
6.2 %	b. scholarships
24.6 %	c. stipends
9.8 %	d. other

Other funds noted: conservation loan fund, grants, private contract, private donor, professional development, salary, travel grant, work study.

Section III. Areas of Conservation Specialization.

Percentage responding (% Resp.) refers to the percentage of audience who responded to category. Mean response refers to the mean response of numbers of objects examined or treated; range refers to the range of answers provided in numbers of objects examined or treated.

	Examined in 1983			Treated in 1983		
Area	%Resp.	Mean	Range	%Resp.	Mean	Range
1. aeronautics, include space/airplanes	0.0	-	-	0.0	-	-
2. animal, live	0.0	-	-	0.0	-	-
3. animal, preserved	1.0	9.25	3-20	0.2	100	100
4. anthropological, ethnographic	16.0	124.45	1-1000	14.0	47.24	1-300
5. archaeological	19.0	135.10	2-2000	17.0	58.33	1-611
6. books	24.0	441.04	1-9999	19.1	210.95	1-5500
7. ceramics, glass	21.0	148.85	1-3000	18.9	49.47	1-700
8. documents, manuscripts, maps	25.0	481.02	1-9999	20.8	117.87	1-2583
9. film, except photographs	3.0	73.16	1-300	1.5	21.71	2-100
10. furniture	20.0	107.99	1-5000	15.5	33.52	1-300
11. geological, mineral, paleontological	2.0	218.50	1-1505	1.1	44.20	1-200
12. historic houses/ buildings	10.0	58.15	1-1000	4.0	7.70	1-50
13. historic sites	3.0	669.00	1-7500	.6	168.50	1-1022
14. horological	4.0	695.18	1-2000	2.3	82.05	1-200

	Examined in 1983			Treated in 1983		
Area	%Resp.	Mean	Range	%Resp.	Mean	Range
15. landscape features	0.2	1.0	1-1	0.2	1.0	1-1
16. machinery	3.0	113.33	1-1000	1.9	31.85	1-246
17. maritime and historic ships	2.3	23.18	1-110	1.5	6.00	1-20
18. medical, dental, health and pharmacological	1.9	156.22	1-1110	1.3	16.16	2-56
19. medals	4.5	1169.57	3-9302	3.0	249.61	2-2500
20. military	5.3	40.32	1-200	3.0	9.21	1-40
21. money and numismatics	3.8	102.72	2-500	2.8	122.30	2-500
22. musical instruments	4.5	19.04	1-300	3.0	2.42	1-8
23. paintings	40.1	87.54	1-700	34.4	130.50	1-8000
24. philatelical	1.5	1633.28	1-6000	0.4	14.50	4-25
25. photography, negatives	4.5	530.42	1-7000	2.5	459.08	1-5004
26. photography, prints	15.1	418.25	1-9999	12.1	162.50	1-5000
27. physical science objects	1.3	854.33	1-5000	.6	10.66	2-25
28. plants, live	-	-	-	-	-	-
29. plants, preserved	0.2	1.0	1	0.2	1	1
30. sculpture, indoor	21.9	46.43	1-2500	19.7	12.67	1-200
31. sculpture, outdoor	12.5	67.39	1-2000	9.3	12.22	1-150
32. textiles and costumes	20.4	108.05	1-2000	15.5	55.05	1-1000
33. tools	4.9	136.00	1-2000	3.8	27.44	1-200
34. toys and dolls	5.7	209.70	1-4000	4.2	141.70	1-2500
35. transportation, exclude airplanes	0.6	17.66	1-50	0.4	1.5	1-2
36. works of art on paper	33.8	185.36	1-4500	27.0	87.04	1-750
37. other	10.0	508.61	1-9999	9.3	261.52	1-9999

The following were listed as "Other" areas of specialization:

archival paper, bone carvings, daguerreotypes, frames, historic leather, jade decorative arts, Japanese screens, metals, murals, oriental paintings, oriental rugs, painted folk art objects, periodicals, polychrome sculpture, porcelain, prints, protective enclosures, sound recordings, wooden carvings and objects

D. The following questions are concerned with examination and treatment policies within institutions.

1. Who determines what needs to be examined and/or treated?

Percentage Responding	Determiners
77.3%	a. conservator/s
61.8%	b. curator/s
27.6%	c. museum (institutional) administrator/s
25.7%	d. other

The following were listed as "Other" determiners of examination and treatment.

architects
archivists
art groups
assistant conservators
board of trustees
city board
clients
collection librarians
collection managers
conservation adminstrators - field/regional offices
directors
exhibitions department
exhibit designers
faculty - historic costumes
head of technical services (historic society)
historic site manager
librarians
museum registrars
owners
scientists (science lab)
technicians
those requesting objects for exhibition

2. Is there a policy requiring that a certain percentage of the collection be examined each year?

7.6% Yes   65.6% No

26.8% no response

E. Over the past five years, have requests for your services increased, decreased or stabilized?

Percentage Responding	Answer
80.5%	Increased
2.8%	Decreased
7.2%	Stabilized
9.6%	did not respond

IV. Analysis of Time. The following was reported to be the percentage of time spent in each conservation activity by the respondents.

Mean Response	Activity
13.3%	A. Administration
2.9%	B. Curatorial Activities Related to Conservation
12.2%	C. Examination
7.1%	D. Professional Consultation
4.8%	E. Personal Professional Development
2.0%	F. Publication
6.7%	G. Research
6.4%	H. Supervision of Staff
5.2%	I. Teaching
38.4%	J. Treatment
8.2%	K. Preservation Activities
2.6%	L. Other

V. Ownership of Collections. Percentages of respondents who served the following types of organizations in a conservation capacity.

% Responding	Ownership of Collections
32.3%	A. Employing Institution ONLY
64.1%	B. Other (as many types and percentages as are appropriate)
2.41%	1. corporation
5.17%	2. gallery
27.37%	3. individuals/private collector/s
24.83%	4. museum
10.42%	5. private institution/non-governmental
11.72%	6. public institution/governmental
2.15%	7. other

The following were listed as "other" owners of collections served:

antiquarians
antique dealers
archaeological excavations
dealers of books
university

VI. Auxiliary Activities related to Conservation

A. Educational

(Numbers represent percentage of response to each category listed.)

1. How would you describe your role as an educator?

20.8% formal, structured
35.2% formal, unstructured
46.3% informal
18.3% not applicable

B. Research

(Numbers represent percentage of response to each category listed.)

1. Archaeometry

14.4% a. applied
7.6% b. basic
2.1% c. other

The following were listed as "other" archaeometric research:

design and building of equipment
history of technology
material culture studies
nomenclature
supervision of postdoctoral fellow research

2. Conservation

60.3% a. applied
30.8% b. basic
5.3% c. other

The following were listed as "other" forms of conservation research:

artists techniques and materials
developing techniques suitable for library materials
environmental problems
equipment
history of artists techniques
lining systems and materials
techniques of original structures

33.3% 3. Historical

9.3% 4. Other

The following were listed as "other" forms of applicable research:

art historical research
artists materials and techniques
binding techniques
curatorial
documentation (computerization)
material culture studies
museum environment
pest control for exhibitions
technology research

VII. Needs

A. Please identify your facility's conservation-related needs:

Percentage Responding	Need
58.2%	1. access to additional conservation information
58.6%	2. additional analytical (scientific) equipment
61.6%	3. additional conservation equipment
53.7%	4. additional library/research materials
32.3%	5. additional materials/supplies
56.3%	6. additional space
53.3%	7. additional staff
34.8%	8. computer equipment
11.3%	9. other

The following were listed as "other" facilities' needs:

additional environmental controls
additional experts in art history
additional experts in science
additional funds for research conducted by private conservators
architectural redesign and relocation
communication
contact with other conservators
documentation equipment
fellowship funds for students in program (training program)
funding
funding for building improvements and surveys
funding for research
improved staff salaries
money
more expertise in scientific analysis
natural light
subsidized refresher courses
support from management for conservation
time for professional development of staff
travel funds relevant to research and treatment
workshops available in related fields

B. Please identify the needs of the collections you serve.

The following were ranked from 1 to 8; 1 signifying the respondents greatest need and 8 signifying the least.

Rank	Collections' Needs
5	1. documentation techniques
1	2. environmental control
6	3. exhibition/display
4	4. expertise in proper handling
7	5. expertise in proper packing
8	6. expertise in proper shipping
2	7. storage/holding
3	8. other

The following were listed as "other" collections' needs:

administrative planning and focus
better understanding of materials by artists
conservation space and materials
continuing education in basic conservation techniques

curatorial/administrative understanding and cooperation
curatorial awareness of conservation problems
curatorial expertise - connoisseurship
deaccessions
deacidification
defining limits and needs of collections
early identification of deterioration problems
expertise in conservation science
expertise in library binding and techniques
format conversion (microforms, optical discs)
funds for additional staff
historic home preservation from sunlight and other elements
identifying conservation problems
larger collections management staff
loan policies that consider the condition of the object
maintenance guidelines (architectural conservation)
monitoring program for signs of deterioration
overseeing role by conservation staff
pest control - fumigation
preventive maintenance programs
proper repair of library material, including commercial binding
proper storage and maintenance of collections
re-housing of works of art on paper in better materials
sampling guidelines (ethnographic)
security
staff to check large loan shows for condition on arrival and departure
standardizing photographic documentation
time
treatment

C. Do you have a decision-making role in museum policy regarding accessioning and deaccessioning of objects/collections?

25.5% Yes 58.2% No 16.3% (did not answer)

D. Please identify priority needs of the personnel associated with the collections you serve. (1 signifies the greatest need; 8 signifies the least need.)

Rank	Personnel Needs
5	1. access to conservation information
6	2. access to conservation specialists
7	3. access to conservation scientists and other research specialists
1	4. additional financial support
3	5. better conservation training and awareness for staff
2	6. conservation awareness among institutional administrators
4	7. conservation awareness among institutional trustees
8	8. other

The following were listed as "other" personnel needs:

access to cooperative and commercial conservation services, supplies and equipment
funds to support faculty development
greater role for conservators in establishing institutional policy
increased interest in varied collections - not just art
long range plan to budget steadily for personnel
more trained personnel in collections care
need a head conservator
public awareness of conservation

APPENDIX IV

CONSERVATION FACILTIES QUESTIONNAIRE

LIVING COLLECTIONS

Answers to this questionnaire are provided in percentages of responses to each question. Answers may not total 100% because percentages have been rounded to tenths of points, not all respondents answered every question, some questions allow for multiple responses, and some questions are analyzed according to mean responses.

The following is based on the responses of directors of 68 conservation facilties that conserve living collections.

Section I. General Information

This section requests identifying information such as name, title, name of institution, business address, and geographic location. To protect the rights of privacy for respondents to the survey, only a small portion of this information was retained for presentation in this report. The analysis of this section includes ony type of institution and geographic location.

Type of Institution	Percentage Responding
Aquarium	5.9%
Arboretum/Botanic Garden	44.1%
Zoo	50.0%

Geographic Location	Percentage Responding
New England	8.8%
Northeast	16.2%
Midwest	19.1%
Southeast	17.6%
Mountain-Plains	13.2%
West	23.5%
no response	1.5%

Section II. Full-Time-Equivalent Employees (FTE's) in conservation on staff.

Type of Employee	Percentage Responding	Range of Responses	Mean Response
A Director of Conservation	70.6%	1.0 - 2.0	.9
B. Chief Conservator/s	29.4%	0.2 - 5.0	3.4
C. Conservator/s	91.2%	1.0 - 35.0	3.2
D. Assistant Conservator/s	30.9%	0.3 - 44.0	4.5
E. Fellow/Advanced Intern/ Master Apprentice	9.3%	0.05- 5.0	1.4
F. Conservation Intern/s	19.1%	0.1 - 8.0	1.8
G. Conservation Photographer/s	7.4%	1.0 - 2.0	1.2
H. Conservation Scientist/s	25.0%	0.1 - 8.0	1.8
I. Conservation Technician/s	69.1%	0.01- 99.0	8.1
J. Support Staff	51.5%	0.1 - 99.0	51.5
K. Other	22.1%	0.1 - 99.0	22.8

Based on the results of Section II, total numbers of employees were calculated as follows:

Number of FTE's	Percentage Responding
.1 - 5	38.2%
5.1 - 10	10.3%
10.1 - 15	11.8%
15.1 - 20	8.8%
over 20	25.0%
	6.0 no response

The following types of full-time employees were listed under "Other":

Administrators
Business Managers
Cashiers
Clerks
Conservation Volunteers
Curators
Custodial Staff
Education Curators
Museum Curators
Outside Contractors
Security Staff
Teachers
Zoo Keepers

Section III. Areas of specialization in which full-time-equivalent employees serve, or are needed to serve, on staff or on contract. Numbers listed reflect percentages of respondents acknowledging categories.

Area	ON STAFF(%)		ON CONTRACT(%)		TOTAL(%)	
	Have	Need	Have	Need	Have	Need
animal, live	55.9	45.9	11.9	10.3	67.8	56.2
animal, preserved	5.9	2.9	0.	0.	5.9	2.9
landscape features	27.9	20.6	1.5	3.0	29.4	23.6
plants, live	60.3	49.5	2.9	2.9	63.2	52.4
plants, preserved	8.8	5.9	2.9	1.5	11.7	7.4

The following areas were listed under "Other".

Archivists
Building Maintenance
Colorslides
Educators
Murals

If sources are (or become) available to support additional staff positions, are conservation professionals available to be hired?

83.8% Yes 5.9% No 10.3 No Response

Section IV. Analysis of Time spent by collective conservation staff.

Mean Responses	Activity
12.2%	A. Administration
25.5%	B. Curatorial Activities Related to Conservation
5.3%	C. Examination
2.0%	D. Professional Consultation
2.0%	E. Personal Professional Development
1.6%	F. Publication
6.0%	G. Research
23.2%	H. Supervision of Staff
6.3%	I. Teaching
8.8%	J. Treatment
14.4%	K. Preservation Activities
12.3%	L. Other

The following activities were listed as "Other" activities:

- animal cure maintenance
- care of live animals
- necropsy of specimens
- routine horticulture

Section V. Budget

A. Institutional Operating Budgets for FY 1984.

83.8% responded

Mean: $2,665,341.68

Range of Responses: $65,000 - $5,757,000

Institutional Budget Ranges	Percentages Responding
$75,000 or less	4.4%
$75,001 - $150,000	2.9%
$150,001 - $600,000	26.5%
$600,001 - $1,000,000	32.3%
over $1,000,000	33.8%

B. FY 1984 Operating Budgets for Conservation.

83.8% responded

Mean: $412,032.84

Range of Responses: $1,000 - $5,757,000

Conservation Budget Ranges	Percentages Responding
$50,000 or less	16.2%
$50,001 - $75,000	8.8%
$75,001 - $150,000	16.2%
$150,001 - $600,000	27.9%
over $600,000	30.9%

Based on the operating budgets and conservation reported, an analysis of percentages of operating budgets allocated to conservation follows.

% of Institutional Budgets Going to Conservation	Percentages Responding
5% or less	17.5%
5% - 25%	47.4%
26% - 75%	21.1%
75% - 100%	14.0%

C. Income for Conservation Facility.

Mean Responces	Source
2.8%	1. federal sources
36.1%	2. state/local sources
6.5%	3. private granting sources
9.3%	4. endowment
7.4%	5. gifts
4.4%	6. fees for services
6.2%	7. membership fees
17.0%	8. line item of host institution
8.8%	9. other

The following were listed as "Other" categories of income:

Admissions
Fundraising Activities
Grants
Other Private Funds
Shop Sales
Special Activities

D. Expenses for Conservation Facility.

Mean Responses	Source
4.8%	1. conservation equipment
1.3%	2. analytical equipment
14.5%	3. materials/supplies
9.9%	4. overhead
59.3%	5. salaries/benefits
4.5%	6. services purchased
1.2%	7. other

The following items were listed as "Other" expenses:

Acquisition of Animals
Animal Feed
leases
Maintenance for Buildings and Grounds
Travel Allowances
Utilities

Section VI. Conservation Facilities
(Facilities of living collections were asked not to respond to #A)

B. Size of Facility.

1. indoor square footage		82.4%
a. under 600	2.9%	
b. 601 - 1200	10.3%	
c. 1201 - 2000	2.9%	
d. over 2000	66.2%	
	17.6% (did not respond)	

2. outdoor acreage		95.6%
a. under 5	13.2%	
b. 6 - 10	1.5%	
c. 11 - 25	8.8%	
d. 26 - 50	19.1%	
e. 51 - 100	19.1%	
f. 101 - 200	11.8%	
g. over 200	22.1%	
	4.4% (did not respond)	

C. Major Pieces of Conservation Equipment. Numbers reflect percentages of respondents acknowledging category.

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
1. abrasive cleaning equipment	11.8	88.2	4.4	5.9
2. balance	26.5	73.5	4.4	10.4
3. cryogenic equipment	11.8	88.2	5.9	7.3
4. environmental testing chamber	4.4	95.6	4.4	4.4
5. flame-resistant solvent storage	11.8	88.2	1.5	11.2

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
6. fume hood	11.8	88.2	2.9	11.8
7. IR vidicon	2.9	97.1	1.5	1.5
8. laser	-	100.0	1.5	-
9. microscope, binocular	51.5	48.5	10.3	27.9
10. photographic equipment	45.6	54.4	13.2	14.7
11. spray equipment	41.2	58.8	2.9	13.3
12. tissue culture equipment	13.2	86.8	7.4	11.8
13. vacuum cold table	-	100.0	-	4.4
14. vacuum hot table	-	100.0	-	5.9
15. welding equipment	39.7	60.3	10.3	10.3
16. radiographic equipment	16.2	83.8	5.9	14.7
17. other	13.2	86.8	2.9	8.8

The following items were listed as "Other" conservation equipment:

anesthesia machine
bacterial culture incubator
electronic security
endoscope
full service facility for pathology (clinical) and microbiology
motorized carts
mowing machines
propagation green houses
tree care equipment
x-ray equipment

D. Major Pieces of Analytical Equipment. Numbers listed reflect percentages of respondents acknowledging category.

Item	Have(%)	Do Not Have(%)	Have Access(%)	Need(%)
1. atomic absorption	4.4	95.6	4.4	7.4
2. computer	29.4	70.6	8.8	26.5
3. emission spectrograph	1.5	98.5	2.9	2.9
4. energy dispersive spectrometer	-	100.0	1.5	2.9
5. FTIR spectrometer	-	100.0	1.5	2.9
6. gas chromatograph	1.5	98.5	5.9	7.4
7. IR spectrometer	1.5	98.5	5.9	2.9
8. mass spectrometer	1.5	98.5	5.9	4.4

Item	Have(%)	Do not Have(%)	Have Access(%)	Need(%)
9. microscope, compound	23.5	76.5	5.9	14.7
10. microscope, electron	1.5	98.5	8.8	4.4
11. microscope, reflecting	11.8	88.2	4.4	8.8
12. microscope, polarizing	4.4	95.6	5.9	5.9
13. nuclear reactor	1.5	98.5	-	2.9
14. photographic equipment	26.5	73.5	10.3	16.2
15. thermoluminescence	-	100.0	-	4.4
16. x-ray diffraction	2.9	97.1	2.9	2.9
17. x-ray flourescence	3.0	97.0	7.4	7.4
18. other	8.8	91.2	-	1.5

The following items were listed as "Other" Analytical Equipment:

blood analyzer
coultercouster
H.P.L. chromatograph
gas analyzer
reflecting spectrometer
U.U. spectrophotometer
x-ray equipment (veterinary)

VII. Care of Collections

A. Do you have an institutional policy requiring that a certain percentage of the collection be examined each year?

Yes	57.4%
No	36.8%

5.9% no response

B. What percentage of your collection is examined each year?

range of responses: 5% - 100%

50% of respondents indicate 100% of collection is examined

C. Who determines policy regarding what needs to be examined?

45.6% 1. conservation staff
72.1% 2. curatorial staff
42.6% 3. museum (institutional) administrative staff
22.1% 4. other

The following were listed as "Other" determiners of examination policy:

Board of Trustees
Directors
Field Zoological Supervisors
Horticulturists
Veterinary Staff
Visitors Reports

D. Who determines policy regarding accessioning and deaccessioning?

39.7% 1. conservation staff
64.7% 2. curatorial staff
50.0% 3. museum (institutional) administrative staff
16.2% 4. other

The following were listed as "Other" determiners of accessioning and deaccessioning:

Board of Park Commissioners
Board of Trustees
Director of Plant Committee
Registrar
Veterinarians

VIII. Educational Activities in Conservation. Numbers listed reflect percentages of respondents acknowledging category.

Activity	1978	1979	1980	1981	1982	1983	1984
A. preparatory training	48.5	51.5	58.8	58.8	60.3	61.8	61.8
B. basic training	17.6	17.6	19.1	23.5	26.5	26.5	27.9
C. internships	25.0	26.5	32.4	38.2	42.6	47.1	44.1
D. advanced training	7.4	7.4	7.4	7.4	7.4	5.9	8.8

Activity	1978	1979	1980	1981	1982	1983	1984
E. programs for university students	26.5	29.4	29.4	32.4	38.2	41.2	39.7
F. programs for other institutional personnel	13.2	14.7	13.2	13.2	13.2	17.6	22.1
G. workshops/seminars	27.9	33.8	35.3	39.7	42.6	45.6	44.1
H. consulting services	23.5	20.6	20.6	23.5	27.9	27.9	27.9
I. clients	17.6	20.6	22.1	22.1	23.5	23.5	25.0
J. programs for general public (advocacy)	47.1	51.5	52.9	54.4	55.9	55.9	51.5
K. other	4.4	4.4	4.4	4.4	4.4	4.4	4.4

L. Facilities which have not offered educational programs in conservation.

22.1%

IX. This final section deals with priority NEEDS of conservation facilities.

A. The following were ranked from 1 to 7 to signify the needs of general areas; 1 signifying the greatest need and 7 the least.

5 1. administrative organization (or reorganization) of facility
3 2. equipment (conservation)
6 3. equipment (analytical)
4 4. greater voice for conservation in museum policies
2 5. space
1 6. staffing
7 7. other

The following areas were listed as "Other" priority needs:

development of satellite research facility
funding for specific conservation programs
funding from directors for exhibits
marketing and public relations
operating expenses
physical facilities
professional consulting services
propagation facilities
research funding in cryogenics
security

B. This part expands on Part A of this section, identifying priority needs of general areas.

1. Greater Voice for Conservation in Museum Policies

The following are ranked according to need from 1 to 8; 1 signifying the greatest need and 8 the least.

3 a. documentation
4 b. environmental control
2 c. exhibition/displays
6 d. loans/acquisitions
8 e. packing/handling
5 f. storage/holding
1 g. grounds supervision and maintenance
7 h. security

2. Equipment (Conservation)

Please choose and identify the top 5 priority needs among the conservation equipment listed. Rank these priorities from 1 to 5; 1 signifying the greatest need and 5 signifying the least.

1 (j.) photographic equipment
2 (i.) microscope, binocular
3 (l.) tissue culture equipment
4 (k.) spray equipment
5 (p.) radiographic equipment

Also showing significant priority in conservation needs are:

(b.) balance
(q.) other

The following equipment were listed as "Other":

audiovisual equipment
bacteriology culture equipment
electronic security equipment
expanded facilities for propagation
green houses
handling crates
herbarium equipment and facilities
immobilizing physical restraints equipment
laparascope
microscope, inverted
public programs
radio communication equipment
refrigerator
temperature and humidity controls
ultrasound equipment
vehicular equipment
veterinary equipment

3. Equipment (Analytical)

Please choose and identify the top 5 priority needs among the following items. Rank these priorities from 1 to 5; 1 signifying the greatest need and 5 signifying the least.

1 (b.) computer
2 (n.) photographic equipment
3 (i.) microscope, compound
4 (j.) microscope, electron
5. (r.) other

Also showing significant priority in analytical needs:

(f.) gas chromatograph
(k.) reflecting microscope
(q.) x-ray flourescence

The following equipment was listed as "Other" analytical needed:

animal hospital equipment needed
dissecting equipment
laparascopy equipment
portable x-ray equipment

4. Space for Conservation Activities

The following are ranked according to need from 1 to 8; 1 signifying the greatest need and 8 the least.

4 a. adminstration
3 b. conservation laboratories/supplies
7 c. packing/packing equipment/carpentry
6 d. photography
5 e. scientific examination equipment
2 f. storage/holding
1 g. breeding/propogation
8 h. other

The following were listed as "Other" activities needing space:

acreage for growing specimens/species in large numbers
animal keepers
better sites
consessions
educational activities
exhibit facilities
greenhouses
information dissemination network
space for labor
space for programs

APPENDIX V

CONSERVATION PROFESSIONALS QUESTIONNAIRE

LIVING COLLECTIONS

Answers to this questionnaire are provided in percentages of response to each question. Answers may not total 100% because percentages have been rounded to tenths of points, not all respondents answered every question, some questions allow for multiple responses, and some questions are analyzed according to mean responses.

The following analysis is based on the responses of 118 conservation professionals who conserve living collections.

Section I. General Information

A. Geographic Location

4.2%	1.	New England
16.9%	2.	Northeast
27.1%	3.	Midwest
15.3%	4.	Southeast
13.6%	5.	Mountain-Plains
20.3%	6.	West
2.5%		no response

B. Type of employment and percentage of professional time spent in each category marked.

Percentage Responding	Type of Employment
1.6%	Aquarium
28.0%	Arboretum/Botanic Garden
.8%	Historic Society/Historic Site
1.6%	Museum (include university museums) The majority of respondents to the museum category did not specify type of museum.
1.6%	University (exclude university museums)
69.5%	Zoo
1.6%	Other

C. Position Held.

Percentage Responding		Position
15.3%	1.	Director of Facility
5.9%	2.	Chief Conservator
60.1%	3.	Conservator
3.4%	4.	Assistant Conservator
8.5%	5.	Conservation Technician
22.0%	6.	Conservation Scientist
6.8%	7.	Conservation Educator

D. Professional Titles. Of the 53 answers provided here, the following were cited most frequently.

Curator of Mammals
Director
General Curator
General Curator of Birds
Horticulturist
Zoo Director

Other titles listed were:

Administrative Assistant, Animal Keeper, Animal Techician, Area Supervisor, Area Supervisor/Feline, Assistant Animal Care Manager, Assistant Botanist, Assistant Curator of Mammals, Assistant Department Head for Horticulture, Assistant Director, Assistant Director for Animal Programs, Assistant Superintendent for Herpetology, Associate Curator of Mammology, Associate Curator of Ornithology, Chairman/Department of Horticulture, Conservation Coordinator, Curator of Animals, Curator of Herpetology, Curator of Living Collections, Curator of Plant Collections, Curator of Reptiles, Curator/Taxonomist, Dendrologist, Director of Arboretum, Director of Botanical Garden, Director of Horticulture, Director of Research, Director of Scientific Affairs, General Curator of Mammals, Geneticist, Plant Pathologist, Plant Propagator, Plant Taxonomist, Population Manager, Professor of Botany, Registrar, Research Behaviorist, Research Primatologist, Senior Gardener, Senior Horticulturist, Superintendent of Horticulture, Veterinarian, Vice President for Horticulture, Zoo Keeper, Zoo Manager, Zoological Curator, Zoological Operations Supervisor, Zoologist

Position is Full-Time	97.5%
Position is Part-Time	1.7%
no response	.8%

E. Length of Time in Conservation.

Mean Response	Range of Response	
7.0	1.0-34.0	1. Years in Present Position
7.9	1.0-23.0	2. Years in Practice before Present Position

3. Total Length of Time in Conservation

Percentage Responding	Total Time
14.4%	a. less than 5 years
25.4%	b. 6 - 10 years
28.8%	c. 11 - 15 years
14.4%	d. 16 - 20 years
16.1%	e. more than 20 years
.8%	(no response)

Section II. Educational Background in Conservation

A. Source/s of Education.

1. Advanced degree

46.6% Yes 52.5% No .8% no response

Major fields of specializations:

Biology, Horticulture, and Zoology were cited most frequently.

Other fields listed were:

Administration, Animal Behavior, Animal Husbandry, Animal Psychology, Anthropology, Biological Anthropology, Botany, Comparative Psychology, Ecology, Endangered Species, Environmental Studies, Experimental Psychology, Forestry, Genetics, Limnology, Malacolgy, Mammalogy, Marine Biology, Mycology, Nursery Management, Ornamental Horticulture, Park Administration, Plant Pathology, Plant Physiology, Primatology, Recreation, Reproductive Biology, Soil Physics, Veterinary Medicine, Veterinary Science, Wildlife Management

Year of Graduation: range 1943 - 1984

2. Undergraduate degree

69.5% Yes 28.8% No 1.7% no response

Major fields of specialization:

Biology, Horticulture and Zoology were cited most frequently.

Other fields listed were:

Agriculture, Animal Behavior, Animal/Veterinary Technology, Animal Husbandry, Animal Science, Anthropology, Biological Parks Management, Botany, Comparative Psychology, Floriculture, Landscape Design, Life Science, Mathematics, Ornamental Horticulture, Plant Ecology, Plant Physiology, Plant/Soil Science, Psychology, Tropical Horticulture, Veterinary Science, Wildlife Management

Year of Graduation: range 1948 - 1983

3. Apprenticeship/s

24.6% Yes 73.7% No 1.7% no response

Number of Apprenticeships Served:

Mean Response: 1.35

Range of Responses: 1 - 4

Number of Months Served Cumulatively:

Mean Response: 22.67

Range of Responses: 4 - 60

4. Internship/s

11.0% Yes 84.7% No 4.2% no response

Number of Internships Served:

Mean Response: 1.53

Range of Responses: 2 - 24

5. Advanced Internship/s or Post-graduate Fellowship/s

5.1% Yes 89.0% No 5.9% no response

Number of Advanced Internships Served:

Mean Response: 1

Number of Months Served Cumulatively:

Mean Response: 8.66

Range of Responses: 2 - 24

B. Funding for Training in Conservation

Editor's Note: The following funding sources are listed in the categories under which they were reported by respondents to the questionnaire.

1. Federal Sources:

Percentage Responding	Source
.8%	a. National Endowment for the Arts
- %	b. National Endowment for the Humanities
2.5%	c. National Museum Act
3.4%	d. National Science Foundation
8.5%	e. Other

The following "other federal sources" were listed.

American Association of Zoological Parks and Aquariums Management School
Fulbright
G.I. Bill
National Audubon Society

National Institute of Health
NIMH
National Research Council of Canada

2. State/Local Sources: Approximately twelve percent (12.7) acknowledged receipt of state/local funding for training. The following sources were listed.

   Atlanta Zoological Society
   City of Houston
   City of Rochester
   County of Monroe
   Forest Institute, Carson City, NV
   Milwaukee County
   State of California
   Wisconsin Alumni Research Fund
   Woodland Park Zoo - Seattle, WA

3. Private Sources:

Percentage Responding	Source
- %	a. Kress Foundation
- %	b. Mellon Foundation
- %	c. Rockefeller Foundations
13.6 %	d. Other

The following other sources of private funding were listed.

Boy Scouts of America
Ford Foundation
Jersey Preservation Trust
Longwood Foundation
University of Chicago
Zoo Society funding

4. Were funds acquired through your training institution?

40.7 % Yes   31.4 % No   28.0 % no response

% Responding   Type of Institutional Fund

13.6 % a. fellowships
11.9 % b. scholarships
16.1 % c. stipends
9.3 % d. other

Other funds noted: assistantships, grants, salary, teaching assistantship

Section III. Areas of Conservation Specialization.

Percentage responding refers to the percentage of audience who responded to the category. Mean response refers to the mean response of numbers of objects examined or treated; range refers to the range of answers provided in numbers of objects examined or treated.

	Examined in 1983			Treated in 1983		
Area	%Resp.	Mean	Range	%Resp.	Mean	Range
2. animal, live	63.0	400	3-4000	51.7	212	1-300
3. animal, preserved	1.7	15	5-25	.8	10	10
15. landscape features	5.1	129	4-750	4.2	122	1-600
28. plants, live	27.1	842	8-3000	23.1	423	2-3000
29. plants, preserved	5.1	918	10-2000	5.1	381	10-1500

D. The following questions are concerned with examination and treatment policies within institutions.

1. Who determines what needs to be examined and/or treated?

Percentage Responding   Determiners

42.4% a. conservator/s
73.7% b. curator/s
33.9% c. museum (institutional) administrator/s
31.4% d. other

The following were listed as "Other" determiners of examination and treatment policies.

Conservaton Scientists
Directors

Garden Superintendents
General Curators
Horticulturists
Propagators
Veterinarians
Zoo Keepers

2. Is there a policy requiring that a certain percentage of the collection be examined each year?

35.6% Yes 61.9% No

2.5% no response

E. Over the past five years, have requests for your services increased, decreased or stabilized?

Percentage Responding	Answer
83.9%	Increased
1.7%	Decreased
9.3%	Stabilized
5.1%	did not respond

IV. Analysis of Time. The following was reported to be the percentage of time spent in each conservation activity by the respondents.

Mean Response	Activity
22.8%	A. Administration
21.2%	B. Curatorial Activities Related to Conservation
7.5%	C. Examination
2.7%	D. Professional Consultation
4.3%	E. Personal Professional Development
7.1%	F. Publication
7.4%	G. Research
19.0%	H. Supervision of Staff
2.9%	I. Teaching
11.3%	J. Treatment
7.8%	K. Preservation Activities
5.1%	L. Other

The following activities were listed under "Other".

collection maintenance
preparation of educational materials
propagation of endangered species

V. Ownership of Collections. Respondents served the following types of organizations in a conservation capacity at the listed percentage of time.

Percentage Responding	Ownership of Collections
72.0%	A. Employing Institution ONLY
27.1%	B. Other (respondents did not specify types of "Other")

VI. Auxiliary Activities related to Conservation

A. Educational
(Numbers represent percentage of response to each category listed.)

1. How would you desribe your role as an educator? Check as many as apply.

24.6% formal, structured
20.3% formal, unstructured
51.7% informal
15.3% not applicable

B. Research
(Numbers represent percentage of response to each category listed.)

1. Archaeometry

- % a. applied
- % b. basic
1.7% c. other

2. Conservation

38.1% a. applied
24.6% b. basic
9.3% c. other

The following were listed as "other" forms of conservation research:

animal management and breeding programs

3. Historical 5.1%

4. Other 16.9%

The following were listed as "other" forms of applicable research:

Animal Husbandry
Applied Research for Living Collections
Behavioral Research
Botanical Research
Computer Research
Consultant to Research Staff
Ecological Systems
Endangered Plants
Evolutionary Biology
Liaison with Botanic Garden Research Center
Plant Evaluations
Plant Growth and Training Techniques
Propagation Research of Methods to Increase Plants in Cultivation
Reproduction/Nutrition
Species Survival Reseach

VII. Needs

A. Please identify your facility's conservation-related needs:

Percentage Responding		Need
44.1%	1.	access to additional conservation information
44.1%	2.	additional analytical (scientific) equipment
41.5%	3.	additional conservation equipment
59.3%	4.	additional library/research materials
47.5%	5.	additional materials/supplies
60.2%	6.	additional space
79.7%	7.	additional staff
58.5%	8.	computer equipment
12.7%	9.	other

The following were listed as "other" facilities' needs:

funding
funding for research into new areas (e.g. cryogenics)
outlets for long-term successful reproduction other than through sales
renovation of existing facilities
tissue culture laboratory
travel funds

B. Please identify the needs of the collections you serve.

The following were ranked from 1 to 8; 1 signifying the respondents greatest need and 8 signifying the least.

Rank		Collections' Needs
3	1.	documentation techniques
2	2.	environmental control
1	3.	exhibition/display
5	4.	expertise in proper handling
8	5.	expertise in proper packing
6	6.	expertise in proper shipping
4	7.	storage/handling
7	8.	other

The following were listed as "other" collections' needs:

access to protected habitats for materials for continued sources of living collections
access to outlets for reproduced propagules
appropriate staff and manpower
better internal communications
easing of federal and state regulations regarding living captive specimens
expertise in animal husbandry
expertise in captive management
plant identification and living materials problems
propagules of endangered species for research purposes
veterinary care

C. Do you have a decision-making role in museum policy regarding accessioning and deaccessioning of objects/collections?

88.1% Yes 6.8% No 5.1% no response

D. Please identify priority needs of the personnel associated with the collections you serve. (1 signifies the greatest need; 8 signifies the least need.)

Rank	Personnel Needs
4	1. access to conservation information
6	2. access to conservation specialists
7	3. access to conservation scientists and other research specialists
1	4. additional financial support
2	5. better conservation training and awareness for staff
5	6. conservation awareness among institutional administrators
3	7. conservation awareness among institutional trustees
8	8. other

The following were listed as "other" personnel needs:

additional personnel
conservation awareness among general public
conservation awareness among local government administrators
more administrative control over staff
more effective intramuseum cooperation and communication
more space
opportunity/motivation for professional advancement
research
space for personnel, collections and equipment

APPENDIX VI

SURVEY INSTRUMENTS:

COVERING LETTERS

CONSERVATION PROFESSIONALS QUESTIONNAIRE

CONSERVATION FACILITIES QUESTIONNAIRE

A&I–2225, Smithsonian Institution, Washington, D. C. 20560
TELEPHONE: 202 357-2295

NATIONAL INSTITUTE FOR THE CONSERVATION OF CULTURAL PROPERTY

MEMORANDUM July 18, 1984

To: Conservation Professionals

From: David A. Shute David A Shute
Executive Director, NIC

Subject: Conservation Questionnaires, IMS Project

The Boards of Directors of the National Institute for the Conservation of Cultural Property (NIC) and the American Institute for Conservation of Historic and Artistic Works (AIC) are encouraging conservators and conservation facilities to participate in a major national project on collections maintenance, collections management and conservation. Congress suggested that this study be done and provided funds for it in the fiscal 1984 appropriations for the Institute of Museum Services (IMS). The project is under contract to IMS and is being undertaken by the American Association of Museums (AAM), the NIC and the AIC. Results of this project will provide a national overview of conservation activities within museums and can be a strong influence on future directions for conservation in the United States.

Two surveys form the core of the project: a study of the museum community by the AAM and a study of the conservation community by the NIC. The conservation survey has been developed by the NIC staff in consultation with representatives from museums with living and non-living collections. This integration of many interests within the broad field of conservation provides an unprecedented opportunity for professionals with conservation responsibilities to speak directly to the IMS, and through IMS, to the Congress regarding important issues and needs of collections.

On the enclosed survey of the conservation community by NIC, a good attempt has been made, despite some inherent differences between living and non-living collections, to modify questions so that they are applicable to living collections and still serve the needs of other types of collections. Supplementary instructions and definitions adapt terms used for the conservation of artifacts into functional equivalents for living collections.

Your contribution to this phase of the project is of great value. Please complete and return your questionnaire by August 22, 1984, to assure that the analysis reflects your concerns regarding conservation of collections. Although your cooperation in this study is voluntary, and your contribution will be completely confidential, the success of the study will be strengthened by each response. I urge your cooperation in this project. If you have any questions about the questionnaire, contact David Shute or Jane Slate at the National Institute for the Conservation of Cultural Property, Inc., A&I-2225, Smithsonian Institution, Washington, D.C. 20560; 202/357-2295.

American Association of Zoological Parks and Aquariums

EXECUTIVE OFFICE AT OGLEBAY PARK, WHEELING, WV 26003 · 1698 (304) 242-2160

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Director
Riverbanks Zoological Park

ARON J. PROCTOR, PH.D.
Curator of Education
couver Public Aquarium

JAMES C. SAVOY, D.V.M.
Director
Phoenix Zoo

18 July 1984

Dear AAZPA Member:

The American Association of Zoological Parks and Aquariums is encouraging its members to participate in a major national project on collections maintenance, collections management and conservation. Congress suggested that this study be done and provided funds for it in the fiscal 1984 appropriations for the Institute of Museum Services (IMS). The project is under contract to IMS and is being undertaken by the American Association of Museums (AAM), the National Institute for the Conservation of Cultural Property (NIC) and the American Institute for Conservation (AIC). Results of this project will provide a national overview of conservation activities within institutions and can be a strong influence on future directions for conservation in the United States.

Two surveys form the core of the project: a study of the museum community by the AAM and a study of the conservation community by the NIC. The conservation survey has been developed by the NIC staff in consultation with representatives from museums with living and non-living collections. This integration of many interests within the broad field of conservation provides an unprecedented opportunity for professionals with conservation responsibilities to speak directly to the IMS, and through the IMS, to the Congress regarding important issues and needs of collections.

On the enclosed survey of the conservation community by NIC, a good attempt has been made, despite some inherent differences between living and non-living collections, to modify questions so that they are applicable to living collections and still serve the needs of other types of collections. Supplementary instructions and definitions adapt terms used for the conservation of artifacts into functional equivalents for living collections.

Your contribution to this phase of the project is of great value. Please complete and return your questionnaire by 22 August 1984 to assure that the analysis reflects your concerns regarding conservation of living collections. Although your cooperation in this study is voluntary, and your contribution will be completely confidential, the success of the study will be strengthened by each response. I urge your cooperation in this project. If you have any questions about the questionnaire, contact David Shute or Jane Slate at the National Institute for the Conservation of Cultural Property, A&I-2225, Smithsonian Institution, Washington, DC 20560; 202/357-2295.

Most sincerely,

AMERICAN ASSOCIATION OF
ZOOLOGICAL PARKS AND AQUARIUMS

Robt O. Wagner

Robert O. Wagner
Executive Director

Enclosure

AABGA
American Association of Botanical Gardens and Arboreta, Inc.
P.O. Box 206, Swarthmore, PA 19081 215-328-9145

MEMO

TO: Staff of botanical gardens and arboreta

FROM: Susan H. Lathrop, Executive Director

RE: AAM/NIC Surveys

The American Association of Botanical Gardens and Arboreta is encouraging botanical gardens and arboreta to participate in a major national project on collections maintenance, collections management and conservation. Congress suggested that this study be done and provided funds for it in the fiscal 1984 appropriations for the Institute of Museum Services (IMS). The project is under contract to IMS and is being undertaken by the American Association of Museums (AAM), the National Institute for the Conservation of Cultural Property (NIC) and the American Institute for Conservation (AIC). Results of this project will provide a national overview of conservation activities within museums and can be a strong influence on future directions for conservation in the United States.

Two surveys form the core of the project: a study of the museum community by the AAM and a study of the conservation community by the NIC. The conservation survey has been developed by the NIC staff in consultation with representatives from museums with living and non-living collections. This integration of many interests within the broad field of conservation provides an unprecedented opportunity for professionals with conservation responsibilities to speak directly to the IMS, and through IMS, to the Congress regarding important issues and needs of collections.

On the enclosed survey of the conservation community by NIC, a good attempt has been made, despite some inherent differences between living and non-living collections, to modify questions so that they are applicable to living collections and still serve the needs of other types of collections. Supplementary instructions and definitions adapt terms used for the conservation of artifacts into functional equivalents for living plant collections. Two major points should be noted:

- Conservation of living plant collections applies to all the collections of a botanical garden or arboretum, not just endangered species.
- Conservation efforts must be distinguished from collections maintenance, albeit somewhat arbitrarily at times for living specimens. For plant collections, conservation includes: propagation for the preservation/dissemination of a species of concern, research in propagation, special efforts to combat insects and diseases, lightning protection and major pruning, cabling and bracing. Collections maintenance includes provision for proper growing conditions, basic cultural care and routine protection from insects and diseases.

Your contribution to this phase of the project is of great value. Please complete and return your questionnaire by August 22, 1984, to assure that the analysis reflects your concerns regarding conservation of living collections. Although your cooperation in this study is voluntary, and your contribution will be completely confidential, the success of the study will be strengthened by each response. I urge your cooperation in this project. If you have any questions about the questionnaire, contact David Shute or Jane Slate at the National Institute for the Conservation of Cultural Property, Inc., A&I-2225, Smithsonian Institution, Washington, DC 20560; 202/357-2295.

A&I—2225, Smithsonian Institution, Washington, D. C. 20560
TELEPHONE: 202 357-2295

NATIONAL INSTITUTE FOR THE CONSERVATION OF CULTURAL PROPERTY

Unique number ______
For NIC Use Only

CONSERVATION PROFESSIONALS QUESTIONNAIRE

OMB 3137 - 0009
Expiration Date 11/30/84

Conservation Professionals

I. General Information

A. Geographic Location (check appropriate number below):

____1. New England (CT, ME, MA, NH, RI, VT)
____2. Northeast (DE, DC, MD, NJ, NY, PA)
____3. Midwest (IL, IN, IA, MI, MN, MO, OH, WI)
____4. Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV)
____5. Mountain-Plains (CO, KS, MT, NE, NM, ND, OK, SD, TX, WY)
____6. West (AK, AZ, CA, HI, ID, NV, OR, UT, WA)

B. For what type of institution do you work in conservation or do you provide conservation or conservation-related services? (If you are employed by more than one category, please indicate percentages of your time for each. For instance, you may spend 100% of your professional time employed by a regional conservation center; or, you may spend 50% of your professional time employed by a museum and 50% employed in private practice.)

_____% 1. Aquarium
_____% 2. Arboretum/Botanic Garden
_____% 3. Historic Society/Historic Site
_____% 4. Library
_____% 5. Museum (include university museums)
check appropriate type/s:

    ____a. art
    ____b. childrens
    ____c. general
    ____d. history
    ____e. natural history/anthropology
    ____f. nature center
    ____g. planetarium
    ____h. science and technology
    ____i. other, specify: ______________________________

_____% 6. Regional (Cooperative) Conservation Laboratory
_____% 7. Private Practice/Contract Veterinarian
_____% 8. University (exclude university museums)
_____% 9. Zoo
_____%10. Other, Specify: ______________________________________

GLOSSARY

The following definitions relevant to this survey of professional conservators and conservation facilities provide a basis for answering the questionnaire/s. The traditional definitions are followed by further explanations (in caps) for professionals and/or facilities representing living collections.

1. Conservation encompasses three explicit functions: examination, preservation, and restoration.

   Examination is the preliminary procedure taken to determine the original structure and materials comprising an artifact and the extent of its deterioration, alteration, and loss.

   Preservation is action taken to retard or prevent deterioration or damage in cultural properties by control of their environment and/or treatment of their structure in order to maintain them as nearly as possible in an unchanging state.

   Restoration is action taken to return a deteriorated or damaged artifact as nearly as is feasible to its original form, design, color, and function, with minimal further sacrifice of aesthetic and historical integrity.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), CONSERVATION ENCOMPASSES MAJOR ACTIVITIES UNDERTAKEN WITHIN AN INSTITUTION TO ASSURE THE CONTINUATION OF THE COLLECTIONS, SPECIES OR POPULATIONS. THIS DOES NOT INCLUDE EVERY DAY COLLECTIONS-MAINTENANCE OR COLLECTIONS-MANAGEMENT ACTIVITIES; RATHER IT INCLUDES SPECIAL EFFORTS TO CONSERVE COLLECTIONS, SPECIES OR POPULATIONS AND TO ASSURE THEIR SURVIVAL BEYOND THE TEMPORARY LIFESPANS OF THE INDIVIDUAL OBJECTS.

2. Conservator is the specialist with advanced training in the arts and sciences relating to the theoretical and practical aspects of conservation who is capable of supervising and advising in the three functions of conservation.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), A CONSERVATOR IS A SPECIALIST WITH ADVANCED TRAINING IN AN AREA RELATED TO THE SURVIVAL OF THE COLLECTIONS, SPECIES OR POPULATIONS. UNLIKE THE CONSERVATOR FOR NON-LIVING COLLECTIONS, THIS PROFESSIONAL MAY HAVE BROAD RESPONSIBILITIES FOR THE COLLECTION, ONLY A PORTION OF WHICH MAY BE RELATED TO LONG-TERM SURVIVAL. IN THIS STUDY, ONLY THE LONG-TERM SURVIVAL ACTIVITIES ARE CONSIDERED CONSERVATION ACTIVITIES.

II. Educational Background in Conservation

A. Please provide the following information regarding your source/s of education.

1. Do you hold a graduate degree or other conservation-related advanced degree?

   ______ yes ______ no

   a. What was your major field/s of specialization? ________________________________

   b. In what year did you receive this degree? ____________

2. Do you hold an undergraduate degree related to conservation?

   ______ yes ______ no

   a. What was your major field/s of study? ________________________________

   b. In what year did you receive this degree? ____________

3. Have you served as an apprentice while training in the field of conservation?

   ______ yes ______ no

   a. If so, how many apprenticeships have you held? ________

   b. Cumulatively, how many months did you serve? __________

4. Have you served as an intern while training in the field of conservation? (Please note: advanced internships should be listed in item #5 on the following page)

   ______ yes ______ no

   a. If so, how many internships have you served? __________

   b. Cumulatively, how many months did you serve? ___________

5. Have you held an advanced internship or post-graduate fellowship in conservation?

   _____ yes   _____ no

   a. If so, how many?

   b. Cumulatively, how many months did you serve? __________

B. Please provide the following information regarding funding for your training in conservation (LC: training in conservation-related activities). See question 4 if funding was provided through your training institution.

Check and/or list sources of funds received for YOUR training.

1. Federal Sources:

   _____ a. National Endowment for the Arts
   _____ b. National Endowment for the Humanities
   _____ c. National Museum Act
   _____ d. National Science Foundation
   _____ e. Other/s, Specify:
   ____
   ____
   ____

2. State/Local Sources:

   _____ a. ______________________________
   _____ b. ______________________________
   _____ c. ______________________________
   _____ d. ______________________________

3. Private Sources:

   _____ a. Kress Foundation
   _____ b. Mellon Foundation
   _____ c. Rockefeller Foundations
   _____ d. Other/s, Specify: ______________________________
   ____
   ____

4. Were funds for your training acquired through your training institution?

   _____ yes   _____ no

If yes, were these funds considered:

a. fellowships? ____
b. scholarships? ____
c. stipends? ____
d. other? (please specify) ____________________

III. Areas of Conservation Specialization

Please provide the following information regarding the estimated numbers of objects examined and treated during 1983 BY YOU.

LC: For animals and plants, provide number of populations or species/taxa (not objects) examined and/or treated in 1983. Treatment refers to analysis and subsequent action. For forestry, provide amount of acreage or tracts of land examined and/or treated in 1983.

A. Specialization	B. Estimated Number of Objects Examined in 1983	C. Estimated Number of Objects Treated in 1983
1. aeronautics, include space/airplanes		
2. animal, live		
3. animal, preserved		
4. anthropological, ethnographic		
5. archaeological		
6. books		
7. ceramics, glass		
8. documents, manuscripts, maps		
9. film, exclude photographs		
10. furniture		
11. geological, mineral, paleontological		
12. historic houses/buildings		
13. historic sites		
14. horological		
15. landscape features, constructed		
16. machinery		
17. maritime and historic ships		
18. medical, dental, health and pharmacological		

A. Specialization	B. Estimated Number of Objects Examined in 1983	C. Estimated Number of Objects Treated in 1983
19. medals		
20. military, include weapons & guns		
21. money and numismatics		
22. musical instruments		
23. paintings		
24. philatelical		
25. photography, negatives		
26. photography, prints		
27. physical science objects		
28. plants, live		
29. plants, preserved		
30. sculpture, indoor		
31. sculpture, outdoor		
32. textiles and costumes		
33. tools		
34. toys and dolls		
35. transportation, exclude airplanes		
36. works of art on paper		
37. other, specify:		
a.__________		
b.__________		
c.__________		
d.__________		
e.__________		

D. Please answer the following questions regarding examination and treatment policies within your institution.

1. Who determines what needs to be examined and/or treated? (Check as many as apply)

_____ a. conservator/s
_____ b. curator/s
_____ c. museum (institutional) administrator/s
_____ d. other, specify: ______________________________
____

2. Is there a policy requiring that a certain percentage of the collection be examined each year?

_____ yes _____ no

E. Over the past five years, have requests for your services

_____ increased _____ decreased _____ stabilized

IV. Analysis of Time

Please provide an analysis of time in conservation activities expended BY YOU. This analysis should be provided BY PERCENTAGE.

LC: Percentages of time for individuals charged with conservation responsibilities may not tabulate 100%.

____% A. Administration
____% B. Curatorial Activities
____% C. Examination (LC: Analysis)
____% D. Professional Consultation
____% E. Personal Professional Development
____% F. Publication
____% G. Research
____% H. Supervision of Staff
____% I. Teaching
____% J. Treatment (LC: prescribing treatment and evaluating response)
____% K. Preservation Activities (e.g. cataloguing, environmental control, exhibit design, inventorying, packing, etc.)
____% L. Other, Specify:____
____

V. Ownership of Collections Served BY YOU

Please indicate the types of institutions/organizations served by you in a conservation capacity.

____A. Employing Institution ONLY
____B. Other (fill in as many as are appropriate and list percentage of time spent in each)

_____% 1. corporation
_____% 2. gallery
_____% 3. individuals/private collector/s
_____% 4. museum
_____% 5. private institution/non-governmental
_____% 6. public institution/governmental
_____% 7. other, specify ______________________________

VI. Auxiliary Activities (only as related to conservation as defined for purposes of this survey)

A. Educational

1. How would you describe your role as an educator?

____ a. formal, structured
(e.g. instructor in an educational program)

____ b. formal, unstructured
(e.g. internship/apprenticeship supervisor)

____ c. informal
(e.g. periodic instruction in lab as needed)

____ d. not applicable
(e.g. not an educator)

B. Research (completed or in-progress)

Indicate areas in which you conduct research.

____ 1. Archaeometry
defined as scientific techniques applied
to art and archaeology (cultural materials)

____ a. applied

____ b. basic

____ c. other, specify: ____________________

____ 2. Conservation
defined as studies of conservation materials,
techniques, treatments and the deterioration
mechanism

____ a. applied

____ b. basic

____ c. other, specify: ____________________

____ 3. Historical

____ 4. Other, Specify: ____________________

VII. Needs

A. Please identify your facility's conservation-related needs: (check as many as apply)

_____ 1. access to additional conservation information
_____ 2. additional analytical (scientific) equipment
_____ 3. additional conservation equipment
_____ 4. additional library/research materials
_____ 5. additional materials/supplies
_____ 6. additional space
_____ 7. additional staff
_____ 8. computer equipment
_____ 9. other, specify: ______________________________

B. Please identify the needs of the collections you serve:

This question asks for information on collections management and maintenance needs from the conservator's viewpoint. Please rank the following items in collections management (records) and collections maintenance NEEDS. Rank from 1 to 8; 1 signifying the greatest need and 8 signifying the least need. Respondents are urged to use all numbers so that priority needs may be established. If an item is not applicable, mark "N/A" and continue the numerical order.

____ 1. documentation techniques (cataloguing, inventorying, etc.)
____ 2. environmental control
____ 3. exhibition/display
____ 4. expertise in proper handling
____ 5. expertise in proper packing
____ 6. expertise in proper shipping
____ 7. storage/holding (space and equipment)
____ 8. other, specify: ______________________________
____

C. Do you have a decision-making role in museum (institutional) policy regarding accessioning and deaccessioning of objects/collections?

_____ yes   _____ no

D. Please identify priority needs of the personnel associated with the collections you serve.

Rank the following items from 1 to 8; 1 signifying the greatest need and 8 signifying the least. Respondents are urged to use all numbers so that priority needs may be established. If an item is not applicable, mark "N/A" and continue the numerical order.

____ 1. access to conservation information
____ 2. access to conservation specialists
____ 3. access to conservation scientists and other research specialists
____ 4. additional financial support
____ 5. better conservation training and awareness for staff
____ 6. conservation awareness among institutional administrators
____ 7. conservation awareness among institutional trustees
____ 8. other, specify: ____________________

THE FOLLOWING SECTION OF THIS QUESTIONNAIRE (SECTION VIII) SHOULD BE COMPLETED ONLY BY INDIVIDUALS WHO MANAGE PRIVATE CONSERVATION FACILITIES. DIRECTORS OF OTHER FACILITIES (INCLUDING REGIONAL, COOPERATIVE CENTERS) WILL RECEIVE A SEPARATE QUESTIONNAIRE. IF YOU ARE NOT A DIRECTOR/MANAGER/ OWNER OF A PRIVATE FACILITY, PLEASE DO NOT COMPLETE THE REMAINDER OF THIS QUESTIONNAIRE. ONLY ONE SECTION VIII SHOULD BE COMPLETED PER FACILITY.

VIII. Conservation Facilities

A. Size of Facility

Please provide the following information regarding the size (indoor square footage or outdoor acreage) of your facility.

____ 1. indoor square footage

____ a. 0 - 600
____ b. 601 - 1200
____ c. 1201 - 2000
____ d. over 2000

____ 2. outdoor acreage

____ a. 0 - 5
____ b. 6 - 10
____ c. 11 - 25
____ d. 26 - 50
____ e. 51 - 100
____ f. 101 - 200
____ g. over 200

B. Personnel

Please provide the number of "full-time-equivalent" employees (FTE's) on your conservation staff (FTE is equal to 35 hours or more of staff time per week. Note: 2 half-time employees equal 1 FTE; 3 half-time employees equal 1.5 FTE's). LC: refer to glossary for terms used.

conservation professional/s	number of FTE's
1. conservator/s	
2. conservation scientist/s	
3. conservation technician/s	
4. conservation intern/s	
5. support staff	
6. other	

If resources are (or become) available to support additional staff positions, are conservation professionals available to be hired?

4. _____ yes _____ no

C. Budget

1. Provide your operating budget for fiscal year 1984, excluding any large, one-time capital expenditures that may inflate real budget.

   $________________

2. Please provide the following information regarding income for your facility. Indicate percentages of operating budget for each item listed that may be applicable, using the category "other" to supplement the list. Enter N/A if not applicable.

   ____% a. federal sources
   ____% b. state/local sources
   ____% c. private granting sources
   ____% d. endowment
   ____% e. gifts
   ____% f. fees for services
   ____% g. other, specify: ______________________________

3. Please provide the following information regarding expenses for your facility. Indicate percentages of operating budget for each item listed that may be applicable, using the category "other" to supplement the list.

____% a. conservation equipment
____% b. materials/supplies
____% c. overhead
____% d. salaries/benefits
____% e. scientific equipment
____% f. services purchased
____% g. other, specify:

D. Please fill in the following chart regarding MAJOR PIECES of CONSERVATION EQUIPMENT, defined as items over $1,000. Enter 0 if none.

Item	a. have (number)	b. do not have	c. have access	d. number needed
1. abrasive cleaning equipment				
2. balance				
3. cryogenic equipment				
4. environmental testing chamber				
5. flame-resistant solvent storage				
6. fume hood				
7. IR vidicon				
8. laser				
9. microscope, binocular				
10. photographic equipment				
11. spray equipment				
12. tissue culture equipment				
13. vacuum cold table				
14. vacuum hot table				
15. welding equipment				
16. radiographic equipment				
17. other, specify:				

E. Please fill in the following chart regarding MAJOR PIECES of ANALYTICAL EQUIPMENT, defined as items over $1,000. Enter 0 if none.

Items	a. have (number)	b. do not have	c. have access	d. number needed
1. atomic absorption				
2. computer				
3. emission spectrograph				
4. energy dispersive spectrometer				
5. FTIR spectrometer				
6. gas chromatograph				
7. IR spectrophotometer				
8. mass spectrometer				
9. microscope, compound				
10. microscope, electron				
11. microscope, reflecting				
12. microscope, polarizing				
13. nuclear reactor				
14. photographic equipment				
15. thermoluminescence				
16. x-ray diffraction				
17. x-ray fluorescence				
18. other, specify:				

A&I—2225, Smithsonian Institution, Washington, D. C. 20560
TELEPHONE: 202 357-2295

NATIONAL INSTITUTE FOR THE CONSERVATION OF CULTURAL PROPERTY

CONSERVATION FACILITIES QUESTIONNAIRE

GLOSSARY

The following definitions relevant to this survey of professional conservators and conservation facilities provide a basis for answering the questionnaire/s. The traditional definitions are followed by further explanations (in caps) for professionals and/or facilities representing living collections.

1. Conservation encompasses three explicit functions: examination, preservation, and restoration.

   Examination is the preliminary procedure taken to determine the original structure and materials comprising an artifact and the extent of its deterioration, alteration, and loss.

   Preservation is action taken to retard or prevent deterioration or damage in cultural properties by control of their environment and/or treatment of their structure in order to maintain them as nearly as possible in an unchanging state.

   Restoration is action taken to return a deteriorated or damaged artifact as nearly as is feasible to its original form, design, color, and function, with minimal further sacrifice of aesthetic and historical integrity.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), CONSERVATION ENCOMPASSES MAJOR ACTIVITIES UNDERTAKEN WITHIN AN INSTITUTION TO ASSURE THE CONTINUATION OF THE COLLECTIONS, SPECIES OR POPULATIONS. THIS DOES NOT INCLUDE EVERY DAY COLLECTIONS-MAINTENANCE OR COLLECTIONS-MANAGEMENT ACTIVITIES; RATHER IT INCLUDES SPECIAL EFFORTS TO CONSERVE COLLECTIONS, SPECIES OR POPULATIONS AND TO ASSURE THEIR SURVIVAL BEYOND THE TEMPORARY LIFESPANS OF THE INDIVIDUAL OBJECTS.

2. Conservator is the specialist with advanced training in the arts and sciences relating to the theoretical and practical aspects of conservation who is capable of supervising and advising in the three functions of conservation.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), A CONSERVATOR IS A SPECIALIST WITH ADVANCED TRAINING IN AN AREA RELATED TO THE SURVIVAL OF THE COLLECTIONS, SPECIES OR POPULATIONS. UNLIKE THE CONSERVATOR FOR NON-LIVING COLLECTIONS, THIS PROFESSIONAL MAY HAVE BROAD RESPONSIBILITIES FOR THE COLLECTION, ONLY A PORTION OF WHICH MAY BE RELATED TO LONG-TERM SURVIVAL. IN THIS STUDY, ONLY THE LONG-TERM SURVIVAL ACTIVITIES ARE CONSIDERED CONSERVATION ACTIVITIES.

3. Conservation Scientist is a scientific specialist in one or more of the associated areas of examination, preservation, and restoration.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), A CONSERVATION SCIENTIST IS A SCIENTIFIC SPECIALIST CONDUCTING BASIC AND APPLIED SCIENTIFIC RESEARCH IN AN AREA RELATED TO THE LONG-TERM SURVIVAL OF THE COLLECTIONS, SPECIES OR POPULATIONS.

4. Conservation Technician is an artisan trained in specialized skills but not in the theoretical concepts of conservation nor in a broad range of materials and techniques.

   FOR LIVING COLLECTIONS (AND FOR THE PURPOSE OF THIS STUDY), A CONSERVATION TECHNICIAN IS A PERSON WITH UNIQUE OR SPECIALIZED SKILLS USED IN ASSURING THE LONG-TERM SURVIVAL OF THE COLLECTIONS, SPECIES OR POPULATIONS, BUT NOT TRAINED IN THE BROAD RANGE OF THEORETICAL CONCEPTS OF A CONSERVATOR.

OMB 3137 -0009
Expiration Date 11/30/84

Conservation Facilities

I. Please provide the following general information.

A. Name: ______________________________

B. Title: ______________________________

C. Name of Institution/Organization: ______________________________
____

D. Business Address: ______________________________
____
____

E. Geographic Location (check appropriate number below):

____1. New England (CT, ME, MA, NH, RI, VT)
____2. Northeast (DE, DC, MD, NJ, NY, PA)
____3. Midwest (IL, IN, IA, MI, MN, MO, OH, WI)
____4. Southeast (AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA, WV)
____5. Mountain-Plains (CO, KS, MT, NE, NM, ND, OK, SD, TX, WY)
____6. West (AK, AZ, CA, HI, ID, NV, OR, UT, WA)

II. Please indicate the number of full-time equivalent (FTE) employees in conservation on your staff. (Note: FTE's equal 35 hours or more of staff time per week; 2 half-time employees equal 1 FTE; 3 half-time employees equal 1.5 FTE's). LC: mark items A, C, E, F, H, I, J and/or K.

Type of Employee	Number of FTE's
A. Director of Conservation	
B. Chief Conservator/s	
C. Conservator/s (LC: e.g. horticulturist, plant/animal curator, veterinarian, etc.)	
D. Assistant Conservator/s	
E. Conservation Fellow/Advanced Intern/ Master Apprentice	
F. Conservation Intern/s	
G. Conservation Photographer/s	
H. Conservation Scientist/s (LC: e.g. research scientist, behavioral/ reproductive researcher, botanist geneticist, nutritionist, pathologist plant physiologist, etc.)	
I. Conservation Technician/s (LC: e.g. physiology technician, professional gardener, senior keeper, etc.)	

Type of Employee	Number of FTE's
J. Support Staff	
K. Other, Specify:	

III. Within the following areas of specialization, please indicate the number of full-time-equivalent (FTE's) employees on staff and on contract, also indicating the number needed in each area to meet your current conservation demands. (Note: FTE's equal 35 hours or more of staff time per week; 2 half-time employees equal 1 FTE; 3 half-time employees equal 1.5 FTE's).

A. Area	B. Number of Salaried FTE's ON STAFF		C. Number of FTE's ON CONTRACT	
	Have	Additional Needed	Have	Additional Needed
1. aeronautics, include space/airplanes				
2. animal, live				
3. animal, preserved				
4. anthropological, ethnographic				
5. archaeological				
6. books				
7. ceramics, glass				
8. documents, manuscripts, maps				
9. film, exclude photographs				
10. furniture				
11. geological, mineral, paleontological				
12. historic houses/ buildings				
13. historic sites				
14. horological				
15. landscape features, constructed				
16. machinery				
17. maritime and historic ships				
18. medical, dental, health and pharmacological				
19. medals				
20. military, include weapons & guns				
21. money and numismatics				
22. musical instruments				

A. Area	B. Number of Salaried FTE's ON STAFF		C. Number of FTE's ON CONTRACT	
	Have	Additional Needed	Have	Additional Needed
23. paintings				
24. philatelical				
25. photography, negatives				
26. photography, prints				
27. physical science objects				
28. plants, live				
29. plants, preserved				
30. sculpture, indoor				
31. sculpture, outdoor				
32. textiles and costumes				
33. tools				
34. toys and dolls				
35. transportation, exclude airplanes				
36. works of art on paper				
37. other, specify:				
a.____________				
b.____________				
c.____________				
d.____________				
e.____________				

D. If resources are (or become) available to support additional staff positions, are conservation professionals available to be hired?

_____ yes ______ no

IV. Please provide an analysis of time spent by your collective conservation staff. This analysis should be provided BY PERCENTAGE. (LC: may not total 100%)

____% A. Administration
____% B. Curatorial Activities Related to Conservation
____% C. Examination (LC: Analysis)
____% D. Professional Consultation
____% E. Personal Professional Development
____% F. Publication
____% G. Research
____% H. Supervision of Staff
____% I. Teaching
____% J. Treatment (LC: prescribing treatment and evaluating response)
____% K. Preservation Activities (e.g. cataloguing, environmental control, exhibit design, inventorying, packing, etc.)
____% L. Other, Specify:______________________________

V. Budget

A. Please provide your institution's operating budget for fiscal year 1984.

$________________

B. Please provide your fiscal year 1984 operating budget for conservation. For purposes of documenting operating budgets for conservation, you are asked to exclude any large, one time capital expenditures that may inflate real budget.

$________________

C. Please provide the following information regarding income for your facility (conservation facility ONLY). Indicate percentages of operating budget for each item listed that may be applicable.

____% 1. federal sources
____% 2. state/local sources
____% 3. private granting sources
____% 4. endowment
____% 5. gifts
____% 6. fees for services
____% 7. membership fees (not for services)
____% 8. line item of host (parent) institutional budget
____% 9. other, specify: ______________________________

100% (should total 100% of conservation operating budget)

D. Please provide the following information regarding expenses for your facility. Indicate percentages of operating budget for each item listed that may be applicable.

____% 1. equipment (conservation)
____% 2. equipment (analytical)
____% 3. materials/supplies
____% 4. overhead
____% 5. salaries/benefits
____% 6. services purchased
____% 7. other, specify:

VI. Conservation Facilities

A. LC: DO NOT RESPOND TO THIS QUESTION. PROCEED TO NEXT QUESTION (B).

What is the organizational structure of your conservation facility? Please check one answer ONLY.

____ 1. in-house facility serving host institution ONLY
____ 2. in-house facility serving host institution and OTHERS
____ 3. private laboratory
____ 4. regional (cooperative) conservation center
____ 5. other, specify: ________________________________
____

B. Please provide the following information regarding the size (indoor square footage or outdoor acreage) of your facility.

______ 1. indoor square footage (check below)

_____ a. 0 - 600
_____ b. 601 - 1200
_____ c. 1201 - 2000
_____ d. over 2000

______ 2. outdoor acreage (check below)

_____ a. 0 - 5
_____ b. 6 - 10
_____ c. 11 - 25
_____ d. 26 - 50
_____ e. 51 - 100
_____ f. 101 - 200
_____ g. over 200

C. Please fill in the following chart regarding MAJOR PIECES of CONSERVATION EQUIPMENT, defined as items over $1,000. Enter 0 if none.

Item	a. have (number)	b. do not have	c. have access	d. number needed
1. abrasive cleaning equipment				
2. balance				
3. cryogenic equipment				
4. environmental testing chamber				
5. flame-resistant solvent storage				
6. fume hood				
7. IR vidicon				
8. laser				

Items	a. have (number)	b. do not have	c. have access	d. number needed
9. microscope, binocular				
10. photographic equipment				
11. spray equipment				
12. tissue culture equipment				
13. vacuum cold table				
14. vacuum hot table				
15. welding equipment				
16. radiographic equipment				
17. other, specify:				

D. Please fill in the following chart regarding MAJOR PIECES of ANALYTICAL EQUIPMENT, defined as items over $1,000. Enter 0 if none.

Items	a. have (number)	b. do not have	c. have access	d. number needed
1. atomic absorption				
2. computer				
3. emission spectrograph				
4. energy dispersive spectrometer				
5. FTIR spectrometer				
6. gas chromatograph				
7. IR spectrophotometer				
8. mass spectrometer				
9. microscope, compound				
10. microscope, electron				
11. microscope, reflecting				
12. microscope, polarizing				
13. nuclear reactor				
14. photographic equipment				
15. thermoluminescence				
16. x-ray diffraction				
17. x-ray fluorescence				
18. other, specify:				

VII. Care of Collections Within Your Facility

A. Do you have an institutional policy requiring that a certain percentage of the collection be examined each year?

_____ yes _____ no

B. What percentage of your collection is examined each year?

__________%

C. Who determines policy regarding what needs to be examined? (Check as many as apply)

_____ 1. conservation staff
_____ 2. curatorial staff
_____ 3. museum (institutional) administrative staff
_____ 4. other, specify: ______________________________

D. Who determines policy regarding accessioning and deaccessioning? (Check as many as apply)

_____ 1. conservation staff
_____ 2. curatorial staff
_____ 3. museum (institutional) administrative staff
_____ 4. other, specify: ______________________________

VIII. Educational Activities in Conservation

Please fill in the following chart regarding the educational activities in conservation offered by your facility. Indicate years during which each appropriate activity was offered. If your facility has not been involved in educational activities in conservation, mark item L.

Activity	1978	1979	1980	1981	1982	1983	1984
A. preparatory training (e.g. volunteers)							
B. basic training (e.g. apprenticeships)							
C. internships							
D. advanced training (e.g. fellowships, advanced internships)							
E. programs for university students							

Activity	1978	1979	1980	1981	1982	1983	1984
F. programs for other institutional personnel							
G. workshops/seminars							
H. consulting services							
I. clients (public)							
J. programs for general public (e.g. advocacy)							
K. other, specify:							

L. facility has not been involved in offering educational programs in conservation

______

IX. This final section deals with priority NEEDS of your conservation facility.

A. Please consider priority needs among the following general areas, ranking each from 1 to 7; 1 signifying the greatest need and 7 signifying the least need. Respondents are urged to use all numbers so that priority needs may be established. If an item is not applicable, mark "N/A" and continue the numerical order.

____ 1. administrative organization (or reorganization) of facility
____ 2. equipment (conservation)
____ 3. equipment (analytical)
____ 4. greater voice for conservation in museum policies (e.g. acquisitions, loans, collections management/ maintenance, etc.)
____ 5. space
____ 6. staffing
____ 7. other, specify: ______________________________

B.. To expand on Part A of this section, please identify priority needs listed within each of the following general areas.

1. Greater Voice for Conservation in Museum Policies

Rank the following priority needs from 1 to 8; 1 signifying the greatest need and 8 signifying the least need. Respondents are urged to use all numbers so that priority needs may be established. If an item is not applicable, mark "N/A" and continue the numerical order.

____ a. documentation
____ b. environmental control
____ c. exhibition/display
____ d. loans/acquisitions
____ e. packing/handling
____ f. storage/holding
____ g. grounds supervision and maintenance
____ h. security

2. Equipment (Conservation)

Please choose and identify the top 5 priority needs among the following items. Rank these five priority needs from 1 to 5; 1 signifying the greatest need and 5 signifying the least.

____ a. abrasive cleaning equipment
____ b. balance
____ c. cryogenic equipment
____ d. environmental testing chamber
____ e. flame-resistant solvent storage
____ f. fume hood
____ g. IR vidicon
____ h. laser
____ i. microscope, binocular
____ j. photographic equipment
____ k. spray equipment
____ l. tissue culture equipment
____ m. vacuum cold table
____ n. vacuum hot table
____ o. welding equipment
____ p. radiographic equipment
____ q. other, specify: ______________________________
____

3. Equipment (Analytical)

Please choose and identify the top 5 priority needs among the following items. Rank these five priority needs from 1 to 5; 1 signifying the greatest need and 5 signifying the least.

____ a. atomic absorption
____ b. computer/s
____ c. emission equipment
____ d. energy dispersive spectrometer
____ e. FTIR spectrometer
____ f. gas chromatograph
____ g. IR spectrophotometer
____ h. mass spectrometer
____ i. microscope, compound
____ j. microscope, electron
____ k. microscope, reflecting
____ l. microscope, polarizing
____ m. nuclear reactor
____ n. photographic equipment
____ o. thermoluminescence
____ p. x-ray diffraction
____ q. x-ray fluorescence
____ r. other, specify: ______________________________
____

4. Space for Conservation Activities

Rank the following priority needs from 1 to 8; 1 signifying the greatest need and 8 signifying the least need. Respondents are urged to use all numbers so that priority needs may be established. If an item is not applicable, mark "N/A" and continue the numerical order.

____ a. administration
____ b. conservation laboratories/supplies
____ c. packing/packing equipment/carpentry
____ d. photography
____ e. scientific examination equipment
____ f. storage/holding
____ g. breeding/propagation
____ h. other, specify: ________________________________

APPENDIX VII

ASSISTING PROFESSIONALS AND CALENDAR OF ACTIVITIES

Assisting Professionals

Representatives of Living Collections

Judith Block, Registrar, National Zoo

Nathan Flesness, Program Director, International Species Inventory System, AAZPA

Thomas Foose, Conservation Coordinator, Species Survival Plan, AAZPA

Susan Lathrop, Director, American Association of Botanical Gardens and Arboreta

Theodore Reed, Senior Advisor, National Zoo

Gurdon Tarbox, Director, Brookgreen Gardens

Robert Wagner, Director, American Association of Zoological Parks and Aquariums

Representatives of Non-Living Collections

Carol Aiken, Conservator in Private Practice

Cathleen Baker, Instructor, Art Conservation Department, State University College at Buffalo, SUNY

Arthur Beale, Director, Center for Conservation and Technical Studies, Harvard Art Museums

Barbara Beardsley, Chief Conservator, Art Conservation Laboratory, Inc.

James Bernstein, Co-Director of Conservation, San Francisco Museum of Modern Art

Marigene Butler, Head of Conservation, Philadelphia Museum of Art

Elliott Carroll, Executive Assistant to the Architect of the Capitol of the United States

Elisabeth FitzHugh, Conservation Scientist, Freer Gallery of Art

Mary Todd Glaser, Senior Conservator, Northeast Document Conservation Center

Norvell Jones, Supervisory Conservator, National Archives and Records Service

William Leisher, Head of Conservation, Los Angeles County Museum of Art

Pieter Meyers, Senior Research Chemist, Los Angeles County Museum of Art

Roy Perkinson, Head of Paper Conservation, Museum of Fine Arts

Paul Perrot, Director, Virginia Museum of Fine Arts

Ann Russell, Executive Director, Northeast Document Conservation Center

Shelley Sturman, Acting Head of Objects Conservation, National Gallery of Art

Thomas Taylor, Architectural Conservator, Colonial Williamsburg Foundation

Terry Weisser, Director of Conservation and Technical Research, The Walters Art Gallery

Mary Lou White, Conservator, Art Conservation Laboratory, Inc.

NIC Staff

David Shute, Executive Director

Jane Slate, Program Coordinator

Susan Warner, Secretary

Survey Consultants

Greg Blair, Museum Specialist, Smithsonian Institution

Cindy Carman, Statistician, Smithsonian Institution

Lee-Ann C. Hayek, Chief Mathematical Statistician, Smithsonian Institution

Kenneth McCormick, Computer Programmer Analyst, Smithsonian Institution

Mary Ellen Munley, Independent Survey Specialist

Calendar of NIC Activities

Fall, 1983	Project Planning Stage with AAM and IMS
February, 1984	Contract Signed, naming NIC as Subcontractor NIC Participation in Project Advisory Panel Meeting Joint Meeting of NIC and AIC Boards of Directors NIC Staff Consultations with Representatives of Living Collections
March, 1984	NIC Staff Consultations with All Assisting Professionals to Refine Survey Instruments Pretest of the Survey Instruments
April, 1984	Submission of Questionnaires to the Office of Management and Budget (OMB) through the Institute of Museum Services
June, 1984	Negotiations with OMB for Clearance of Questionnaires
July, 1984	Final Submission of Questionnaires to OMB; Clearance Granted Thereafter Surveys Distributed to Conservation Professionals and Conservation Facilities
August, 1984	Follow-Up Contact with Survey Nonrespondents Announcing Extended Deadline for Completion
September, 1984	Final Deadline for Response to Survey
October, 1984	Computer Analysis Initiated Meeting of NIC and AIC Boards of Directors NIC Staff Consultation with Advisors from Living Collections
November, 1984	Final Telephone Contact with Non-Respondents Final Consultations with Assisting Professionals Final Consultations with Survey Consultants and Computer Analysts
December, 1984	Submission of Results of Conservation Survey Analyses to the American Association of Museums
January, 1985	NIC Participation in Final Meeting of Project Advisory Panel

PROJECT 3: CONSERVATION INFORMATION AND TRAINING PROGRAMS FOR MUSEUM PROFESSIONALS AND THE GENERAL PUBLIC

TAB G

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BACKGROUND

"Conservation Information and Training Programs for Museum Professionals and the General Public" was designed to gather examples of programs conducted by museum-related organizations that provide information and training for museum personnel and the general public regarding collections care. The American Association of Museums developed a list of organizations that may host these types of programs and surveyed this audience. The list included museum service organizations, national organizations that are museum-related, regional arts and/or humanities groups, regional conservation centers, regional and state historical societies, state arts and/or humanities agencies and commissions, and state museum associations.

A letter was sent to 284 organizations requesting information on their programming activities in conservation (see Appendix A). Telephone calls were placed soon thereafter in an attempt to achieve a high rate of response to the request. The AAM, in recognizing that these readily identifiable 284 organizations are not a comprehensive source of information, announced in AVISO, the AAM newsletter, this phase of the IMS project. As a result of this announcement, 31 additional organizations submitted information to the AAM on their conservation information and training programs. All organizations submitting information that is used in this project report are listed in Appendix B. The following illustrates the response rate to the request for information.

Base Distribution: Letters Mailed	284
Adjusted Distribution*	217
Number of Respondents Submitting Information	82
Percentage of Response (of adjusted distribution)	37.7%
Additional Contributing Organizations	31
Total Number of Contributing Organizations	113

The 113 participating organizations submitted information in a variety of ways. Some organizations simply listed the name of their information or training programs, while others submitted detailed descriptions of their programs along with colorful brochures and advertisements. Based on the diverse information received, a list of programs was compiled and is presented here. The list is divided into programs for the general public and those for museum professionals other than conservators.

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* 67 organizations responded that they had no appropriate information to contribute. This number was removed from the base distribution.

As is evident from the list, information programs are as diverse as the sponsoring organizations themselves. They range from one-time lectures to workshops of several days duration, and include more lengthy, intensive training programs. Films, video programs, exhibitions, and publications were also reported as means of disseminating conservation information.

The results of the AAM survey (Project 1: the Museum Collection Survey) demonstrate that museums themselves undertake programs similar to those listed here. Museums indicated that they undertake the training of museum professionals in the following areas: the routine handling of objects (82% of participating museums), the preparation of condition reports (47% of participating museums), the security of objects on exhibit (64% of participating museums), the monitoring of the environment of objects (51% of participating museums) and the conservation of the collections (52% of participating museums). Forty-eight percent reported that they had offered conservation awareness programs for the general public in the last 5 years.

ORGANIZATIONS OFFERING CONSERVATION PROGRAMS

Of the organizations responding to the request for information, cooperative conservation centers appear to be active in organizing programs for the museum community. In general, they offer a variety of services to both their member institutions and the general public and play active roles in conservation education, including the training of conservators. Although they serve particular regions, their programs often go beyond their immediate purview.

Programs range from free clinics to assess the condition of objects, to training of museum staff in the handling of objects. Several centers, such as the Northeast Document Conservation Center and the Williamstown Regional Conservation Laboratory, sponsor internships and courses for students from neighboring colleges. The Balboa Conservation Center plans a public viewing area in the laboratory. Several centers also have newsletters and other publications, give lectures, and advise on exhibition preparation in addition to their primary function of conservation treatment.

In addition to these centers, historical societies are active in the conservation area. On the national level, the American Association for State and Local History (AASLH) has established a collections care program. In addition to innumerable publications, including a series of technical leaflets, it has a consultancy program for museums and historical agencies. It provides grants for this service as does the National Trust for Historic Preservation. Both organizations participate in programs with the Smithsonian Institution. The Smithsonian's training programs for museum professionals are on topics concerning the handling, care and registration of museum collections, and together with its video training programs and traveling exhibitions, are extremely popular throughout the country.

Other national service and museum associations offer programs that reach across the country. The Association of Railway Museums, for example, provides pamphlets and reprints of old technical manuals on the care and maintenance of steam locomotives. The J. Paul Getty Trust offers for four weeks each summer the Museum Management Institute. The Institute is designed to introduce museum managers to a variety of topics, including data management. The American Association of Museums' MAP II (Museum Assessment Program) provides an in-depth review of collections management practices for museum staff and board members. The Institute of Museum Services provides grants to MAP II participants so that museums participate free-of-charge.

Many states have active historical societies providing a variety of programs for state institutions. Arts and humanities councils are also active in the collections care area, although not every state has such a program and the range of activities varies widely. For example, the Bureau of Historic Sites of the New York Parks acts as an intermediary through its referral service; it recommends treatment centers but does not itself undertake treatments. The Wyoming Council for the Humanities sponsors a museum assessment program which consists of a questionnaire and evaluation of a facility. One of the more unusual programs is the Arizona Commission on the Arts' Museum Environment Test kit, which can be rented by a museum to test the environmental conditions of its facilities. Museum staff can attend workshops held in locations throughout the state to learn about safe environmental conditions and how to use the kit.

PROGRAMS FOR THE GENERAL PUBLIC

The typical museum visitor goes to see the objects on view, to hear a lecture, or to see a film. Rarely does he or she see behind-the-scenes and observe how museums keep track of their holdings, prepare works for exhibition or store objects not on view. Museums and museum-related organizations are offering programs to educate their audiences about the procedures necessary for caring for the collections.

Organizations sponsor lectures on conservation topics, hold open houses at their conservation laboratories, include conservation information on object labels, and present exhibitions with a conservation theme. The types of programs offered for the general public include training programs, short seminars and workshops, one-time lectures on conservation topics, films and video programs, as well as exhibitions and publications. Consultancies for the general public, including clinics for the evaluation of the conditions of objects belonging to private collectors, are also offered. The examples discussed here are only a few of those contained in the list that follows.

A number of popular programs are produced by national organizations with primary responsibility for the professionals. "Know What You See: Examination and Treatment of Paintings," is a film produced by Louis Pomerantz that is available from the Smithsonian Institution. It was used in conjunction with a traveling exhibition of the same name. The American Institute for Conservation makes available "RX for Preservation," a film produced by the San Francisco Museum of Art on the conservation and handling of works of art. AIC has also published "Guidelines for Selecting a Conservator," a pamphlet for the general public. The National Institute for Conservation publishes "Careers in Conservation of Cultural Property," and this past year organized a lecture series on conservation topics given at a variety of locations across the country. At each, a professional conservator introduced a general audience to the conservation aspects of different types of collections.

The museum collections questionnaire (Project 1) asked respondents to indicate the type of public information programs on conservation and collections management they had undertaken within the last five years. While 12.5 percent reported programs in conservation, 2.6 percent reported programs on collections management. Museums reported hosting consultation days, workshops, films and other media programs, exhibits, and lectures. Some museums specified the other types of programs they offered. Four botanical gardens indicated that they have plant hotlines; 14 zoos and two aquariums listed programs to explain the protection and conservation of animals in their natural habitats, captive breeding projects, and the care of animals in museums. Two history museums distribute information sheets on preservation, and one natural history museum and one zoo conduct behind-the-scenes tours of their institutions.

Listing of Programs for the General Public

Training Programs for Non-Professionals

- Center for Building Conservation

Hands-on training and apprenticeships for local residents at Society for the Preservation of Weeksville and Bedford Styvesant History, 1981-83.

- Indiana University at Bloomington

Informal adult program, three lectures in each series: "Behind the Scenes at the Art Museum," and "A Visit to the New Art Museum," 1983.

- Kansas Arts Commission

Architectural Preservation Education, "Artist-in-Education" program cosponsored by the Witchita Public Schools for school children grades six through high school, 1981-83. Slide presentations, field trips to architecturally important sites.

- National Preservation Institute

Short courses on historic buildings and preservation for preservationists, students and architecture buffs. Six courses offered in 1984 covering a variety of subjects including restoration of old houses, financial and tax issues. Lectures, demonstrations, field trips to local sites and individual consultations with the faculty.

- Ohio Historical Society

"Taking a Learning Break," weekend educational workshops for adults. Lectures on such topics as furniture and textile conservation; hands-on workshops and historic building rehabilitation.

- RESTORE PHILADELPHIA INC.

Nonprofit educational association serving craftsmen, architects, engineers and developers, and the general public. Teaches low cost preservation techniques through illustrated talks. Tours of projects under construction/ and historic structures usually closed to the public.

- Textile Conservation Workshop

Public education about preservation and conservation techniques provides information, outreach services and research.

Seminars/Workshops

- Balboa Art Conservation Center

Promotes education in conservation by means of lectures, seminars and workshops.

- Early American Industrial Association

Sponsors sessions on tool restoration and collections management for amateur tool collectors.

- Federation of Historic Services

Sponsors workshop for volunteers, "Conservation Clinic," as a public awareness program.

- Historic Deerfield

Workshop 1984, "Textiles in Early New England."

- Mary Washington College, Center for Historic Preservation

In conjunction with the college's regular academic program in historic preservation, organizes conferences, workshops and symposiums for laymen and professionals. Public programs on such topics as preservation planning, residential renovation, commercial preservation and development. Conference lectures have been on "Blueprint for Renovation: Theories, Techniques and Tips on Residential Renovation," 1984.

"Home Remedies: Practical Cures for Household Ailments," series of workshops, September-November 1983, primary focus on household maintenance.

- Merrimack Valley Textile Museum

Workshops in basic handling and care of textiles and training of volunteers.

- National Wildlife Federation

National Wildlife Week Annual program for grades K-12 dealing with current conservation issues; for example, 1984 topic is water. Consists of a multimedia kit and additional information available for children. Also, a new program entitled, "The Class Project," aimed at middle schools to enhance their science curriculum. Science investigations and projects covering six national conservation issues: energy use; environmental issues; forest/watershed management; hazardous substances; wetlands; wildlife habitat management.

- New York State Historical Association

Staff presents lectures and workshops for national, regional and local groups.

- Ohio Historical Society

Regular technical workshops for property owners, realtors, brokers and local government officials. Includes films, speakers and literature on the latest research techniques in preservation.

- RARE (Rare Animal Relief Effort, Inc.)

Youth Education programs: Resource Management Education Program International, program for school children explaining resource management and conservation issues confronting underdeveloped countries. Pilot tested in 1982 in Costa Rica. Also, Conservation Clubs, an international conservation effort for high school students to learn about major conservation issues and to help raise funds.

- Society for the Preservation of New England Antiquities

"Preserving Your Old House" series, Boston Museum of Fine Arts, 1982. Four-part lecture series, two hours each. Designed to give homeowners access to technical information needed to restore their houses.

- State Historical Society of Wisconsin/Wisconsin Council for Local History

"Old House Preservation," one day workshop for general public, 1979.

- University of Delaware

Longwood Program: seminar for the general public on public gardens. 1984 lectures include "Maintaining and Renovating an Outdoor Woody Plant Collection" and "Computerized Collection Management."

- Vermont Council on the Humanities and Public Issues

"Governor's Conference on the Future of Vermont's Heritage," dealt with conservation issues in Vermont's museums, historic societies and houses, 1982. A Preservation Primer, accompanying publication.

- Wisconsin Humanities Commission/Monroe Arts and Activities Center

"Preservation of Old Buildings for Contemporary Use," one-day conference for general public, 1978.

Lectures

- Field Museum of Natural History

Provides lectures to their Women's board by trained conservators, gives numerous tours of the conservation lab, and hosts an open house of the lab once a year.

- Foundation of the American Institute for Conservation

George Stout Memorial Lecture given during American Institute for Conservation's annual meeting for general audience.

- Freer Gallery of Art

Annual R.J. Gettens Memorial Lecture on aspects of the application of Science to Asian Art.

- Missouri Committee for the Humanities

"Learning to Look: An Orientation to Historical Costumes," a slide lecture presented in 1983 as part of a project to increase the society's abilities to collect, preserve and interpret historic costumes.

- National Institute for the Conservation of Cultural Property

Lecture series on museum conservation given in locations around the country, 1984. Topics include "Conservation of Museum Collections;" "Art Conservation -- More Than Just a Pretty Face;" "Conservation of Cultural Property -- A Shared Responsibility."

- NY State Parks and Recreation/Bureau of Historic Sites

- Ohio Historical Society

Speakers bureau provides staff and volunteers to discuss archeological and preservation related topics.

- Textile Conservation Workshop

Lectures to educate the public about preservation, conservation techniques and collections maintenance. For example, "Care of Old Textiles," 1983.

- Williamstown Conservation Laboratory

Sponsors tours and workshops to increase public awareness of conservation techniques for member organizations.

- Wisconsin Humanities Committee/Madison Art Center

Conference on "Preservation of Old Buildings." Slide lectures include "Recent Preservation Efforts in Monroe." Four public lectures on various phases of "Art and Technology," 1978.

Consultancy Programs for Nonprofessionals

- American Horticultural Society

Monthly garden demonstration days.

- Art Museum Association

Provides information exchange services such as formal and informal consulting services for art museums and community organizations; publishes brochures, exhibition catalogs and analyses of such topics as "Technology in Museum Environments." Also, "Visiting Specialist Program."

- Balboa Art Conservation Center

Conservation counseling for the public by appointment in free clinics held one morning each week. Referrals of conservators, on-site inspection of collections to assess the condition of objects and the collection as a whole, initiates permanent record keeping procedures for data of object conditions, and suggests maintenance and long-term conservation priorities.

- Art Conservation Department of the State University College at Buffalo, SUNY (formerly Cooperstown)

Sponsors clinics for the general public to evaluate the conditions of objects.

- Preservation Institute

Currently compiling a list of craftsmen and contractors who have "proven skills on preservation techniques" for referral purposes.

- Ohio Historical Society

Information clearinghouse about federal requirements. Resource center for state and local agencies.

- Society for the Preservation for New England Antiquities

Provides technical assistance to approximately 1,000 individuals annually from local, regional and national organizations..

- Textile Conservation Workshop

Offers consultant service to the general public during public workshops; individuals are encouraged to bring objects for examination and treatment.

- Textile Museum, Washington, D.C.

Provides informal consultant services to the general public.

Film/Video Programs

- American Institute for Conservation

"Paintings, Prescription for Survival," produced by the San Francisco Museum of Modern Art, available for rent from AIC. Film, on curating and handling of art works, geared toward art handlers and others responsible for installation and collections care.

- Kansas Arts Commission/Wichita Public Schools

Slide presentations: "Preservation and Downtown Revitalization" and "Preservation and Energy Conservation," both available from the National Advisory Council for Historic Preservation, and used as part of the Witchita Public Schools' Architectural Preservation Educational Program, 1981-82.

- Metropolitan Museum of Art

"Interpretive Issues for Art Museums," 1984, for showing in museums.

- Nature Conservancy, Arlington, Va.

"Garden of Eve," examining one rationale underlying today's hard environmental conservation choices.

"Atlantic's Last Frontier," 30 minute film on the economic, cultural, nutritional & environmental significance of the Virginia Banner Islands.

"An Oasis in Time," 22 minute film exploring the geology & life of the unique sand dune ecosystem of Southern California Coachella Valley.

"Birds of Prey," 12 minute film on the predatory birds of the Snake River canyon in Idaho.

"Rivers of the Deep South," 30 minute film on the historical, cultural and environmental perspective on Santa Cruz Island California.

"Sound or Silence," 30 minute film describing Mississippi's natural heritage and the state's attempt to identify and save it.

- Smithsonian Institution, Office of Museum Programs

Film used in conjunction with the traveling exhibition, "Know What You See: Examination and Treatment of Paintings,": produced by the San Francisco Museum of Modern Art, 1983 - 84.

- State Historical Society of Wisconsin

"Historic Preservation - A Place in Time" and "Future of the Past"; documentary films used in conjunction with 1978 conference ,"Preservation of Old Buildings for Contemporary Use."

"The Fragile Record," used a publicity for workshops and to arouse interest and awareness in the conservation of the resources of historical research.

Exhibitions

- Balboa Art Conservation Center

In 1982, BACC planned a permanent public exhibition area with a viewing window into the lab.

- Bay Area Conservation Guild

As part of a proposed memorial to George Stout, plans to establish annual public exhibit of 12-18 objects conserved by BACG members, to be shown at a local institution.

- Center for Building Conservation

"Preservation in Progress," organized by the center, sponsored by South Street Seaport Museum, 1983. "Rhapsody in Blue: Terra Cotta Skylines," mounted at Municipal Arts Society Gallery, researched by the Center, 1983.

- Cincinnati Art Museum

Open conservation laboratory showing treatment of Benjamin West's "Ophelia and Laertes."

- Historic Deerfield

Restoration in progress of Ebebnenzer Hinsdale Williams House, open to the public.

- Indiana University at Bloomington

Due to expressed public interest, conservation information is included in gallery tours.

- M.H. deYoung Museum

Exhibition of restoration carried out at the Vatican Museum on objects included in the Vatican Collections exhibition. Accompanying informal lectures.

"Murals from Mexico," exhibition in a public gallery of the on-going conservation of the Teotihuacan Murals. The exhibit will continue for one year through April 1985. Accompanying book to be published in 1985.

- Minneapolis Institute of Art

"Paper and Silk," an exhibition on restored works of Oriental art and photographs documenting the procedures and equipment used. Organized by the Upper Midwest Conservation Center and the Minneapolis Institute in 1982, and was part of an international conference "The Care of Far Eastern Art," in Minneapolis, 1984. Two video tapes accompanied the exhibit: "Conservation of Asian Works of Art" and "A Brief History of The Mounting of Asian Paintings."

- The Museums at Stony Brook

"Dirty Linens," exhibit introducing public to conservation care and handling of historic costumes and textiles.

- National Gallery of Art

1983 photographic exhibition of the current conservation treatment of "Leonardo's Last Supper: Before and After," with accompanying lectures and film.

- New York Historical Society

"New Life for Old Objects: the Art of the Conservator," included restored paintings, objects, guidebooks and posters, 1978.

- RESTORE PHILADELPHIA INC

Mounts private exhibits for hands-on historic restoration of buildings.

- Smithsonian Institution Traveling Exhibition Service (SITES)

"Know What you See: The Examination and Treatment of Paintings," organized by Louis Pomerantz, 1975, sponsored by the Foundation of the American Institute for Conservation. Accompanying film.

- Washington University Technological Associates

Organized traveling exhibition, "The Art and Science of Conservation, Work of the Center for Archeometry." Exhibited at University of Missouri in 1978 and other locations in the state in 1979.

- World Wildlife Fund

"A Future in the Wild," 1984-1986 traveling exhibition to 17 zoos, beginning at the Lincoln Park Zoo, Chicago. Includes 15 minute film, "A Future in the Wild"; two slide/tape shows, "Tropical Rain Forests Under Fire" and "The Roads of Life." Large format display, Conservation Primer, and other visual material also included in traveling show.

Publications

- American Institute for Conservation

"Guidelines for Selecting a Conservator," brochure 1984.

- Art Conservation Lab, New Hampshire

Pamphlets including "The ABC's of Preservation" and "Selecting A Conservator."

- Historic House Association of America

Old-House Journal; sometimes contains information regarding renovation of structures and upcoming schedule of workshops, lecture and related activities.

- Humanities Research Center (University of Texas at Austin)

"Centennial Showcase" booklet.

- Merrimack Valley Textile Museum

Resource pamphlets for the general public to explain their services.

- National Audubon Society

Program designed for children called Audubon Adventures includes subscription newsletter, nature reading and reader's guide for teachers to promote conservation issues.

- National Institute for Conservation

"Careers in Conservation of Cultural Property," brochure.

- National Trust for Historic Preservation

"Preservation News," newsletter.

- Nature Conservancy

Conservancy News Also, Building an Ark by Phillip M. Hoose; tools for the preservation of natural diversity through land protection.

- National Wildlife Federation

Publishes many books and reference material on conservation.

- Ohio Historical Society

Echoes, monthly newsletter about OHS volunteer work, includes aiding archaeologists in field work, lab work, assisting curators in caring for collections, exhibits, etc.

Ohio Preservation, monthly newsletter about funding legislation and preservation programs.

- RARE

Youth education program, secondary school information packs. Also Sea Turtle coloring book and Conservation Concepts for elementary school children.

- Society for the Preservation of New England Antiquities

"Preserving Your Old House," on architectural conservation. "Refurbishing and Repairing Old Floors," in preparation.

Other Programs

- American Horticultural Society

Wildflower Rediscovery Project offers financial reward to individuals who discover extinct or near extinct flowers.

- Society for the Preservation of New England Antiquities

Sponsors "Adopt-an-Artifact" fund-raising program.

PROGRAMS FOR MUSEUM PROFESSIONALS OTHER THAN CONSERVATORS (Includes Programs for Para-Professionals and Docents)

A majority of American museums do not have conservation departments. Of the museums sampled in the museum collections survey (Project 1), 26 percent reported that they have full-time conservators on staff and 6% reported that they have part-time conservators. Consequently, museum professionals other than conservators routinely handle objects and are involved in decisions concerning the use of objects in permanent and traveling exhibitions. Many other museum activities also require an awareness of and ability to recognize conservation problems. Curators, registrars, exhibition preparators, educators, paraprofessionals and docents need general background information about the conditions of objects and the proper environments in which they should be housed on exhibit and in storage.

When asked in the museum collection questionnaire whether museum staff obtain training in the routine handling of objects, preparation of condition reports, security of objects on exhibit, environmental control monitoring and conservation, 20 percent indicated that training was not provided. Of the museums that provided it, more than 75 percent provided it in-house. (For a discussion of training available by museum category, see the museum survey report.) Museums that obtain training for their staff outside of the museum indicated the following sources of training: national organizations such as the AAM, AASLH, AAZPA, and the National Trust; sixteen regional museum organizations, such as the Mid-Atlantic Museum Association Conference and the Michigan Museums Association; cooperative conservation centers; the Smithsonian Institution courses; and programs sponsored by other museums.

The following list represents information on training programs for museum professinals other than conservators. The most frequently reported means of educating museum professionals about collections needs are through one- or two-day workshops on specific subjects and through publications. Also popular are consultancy programs for collections needs, and the cooperative conservation centers' surveys of collection conditions. Lectures, intensive training programs, films, and videos are also used and are listed below.

Listing of Programs for Museum Professionals Other Than Conservators

Training Programs

- The Art Museum Association and the J. Paul Getty Trust

The J. Paul Getty Trust now operates each summer the Museum Management

Institute, which was founded in 1979 and is now administered by the Art Museum Association. Designed by museum leaders, the curriculum includes data management. Scholarships are available through the NEA. Four week course.

- Arizona Commission on The Arts/Prescott Historical Society.

Collections care workshops: series of workshops offered as an introduction to train staff volunteers of history and art museums, libraries, and interested members of the public. Instruction includes discussions of exhibition, handling and storage techniques. Particular emphasis on low cost, low technology solutions to common problems.

- Center for Building Conservation

Training program in masonry cleaning for Central Park Conservancy; classroom and field work, one week duration, 1982. 1984 training program for New York City Department of Housing Preservation and Development; classroom instruction for building superintendants offered in connection with other HPD classes four times a year.

- Center for Conservation and Technical Studies

Technician training workshop for staff members of its nine member institutions, 1983. Consisted of 14 intensive three-hour sessions, two review sessions and an exam. Outgrowth of older program to train museum and library personnel with in-house care of collections.

- Indiana University at Bloomington

Docent training program; classes taught by museum staff. Four class sessions each year are devoted to conservation. Topics include object, paintings, paper and textile conservation. Also, classes in conservation in the museum studies program.

- National Trust for Historic Preservation

Restoration workshops provide preservationists with quality restoration techniques such as carpentry, masonry and building stabilization and train apprentices who will return to their firms or communities to share what they have learned. Most are at National Trust historic properties. Six to 12 apprentices spend from one to three years in the program.

- Ohio Historical Society

Intern training in cooperation with universities and colleges. Society provides on-the-job training for students in museum operations.

- Preservation Institute for the Building Craft

Beginning in 1983, offers training course in historic preservation, building skills for Vermont and New Hampshire contractors, architects, building trades people and museum staffs.

- RESTORE PHILADELPHIA INC.

Restoration skills training programs for people in the building trade and paraprofessionals in the conservation and preservation field.

- Rochester Institute of Technology

Five day conference on the preservation of black and white photographic images, 1984. Basic level course designed for those just becoming involved in preservation of photographic collections. Combines formal presentations, informal discussions and demonstrations. Topics include: "Protective Measures Prior to Attempting Restoration," "Duplicating Historic Black and White Negatives," and "How Photographic Standards Relate to Preservation," "Cataloging and Indexing Photographs."

- Smithsonian Institution, Office of Museum Programs

Five-day (40 hour) training program for mid-career museum professionals. Series includes one workshop on conservation and one on collections management. Internship program in museum practices: available to undergraduate and graduate students and museum professionals, for a few months to a year or more. Also visiting professionals program for museum professionals interested in gaining additional exposure to museum methods; one month or less.

- Society for the Preservation of New England Antiquities

Organized for spring 1985, a five-session seminar on furniture restoration to be held in conjunction with "New England Furniture in the 17th and 18th Centuries," at the De Cordova Museum in Lincoln, Massachusetts. 1983 and 1984, a one-week advanced course in furniture conservation for historic house curators and supervisors of the National Park Service, North Atlantic Region.

In-service training programs provide instruction and further education to allow students to take positions connected with all stages of textile conservation. May include on-site training and assistance in setting up a workroom.

- University of Texas/Winesdale Historical Center/Texas Historical Commission/Texas Association of Museums

Winesdale Seminar on Administration and Interpretation for Museums. Eleven-day seminar for staff members or volunteers in small to mid-size museums in the Mountain Plains region, Alaska, Louisiana or Arizona. Designed to improve quality of community and regional history museums. Lecture topics include: conservation of collections, interpreting collections and museum security.

Seminars/Workshops

- African American Museums Association

Five-day workshop, "Collecting Contemporary African American Culture," Washington, D.C., 1983. Topics included "Caring for the Contemporary Collection."

- Arkansas Endowment for the Humanities

Proposed a program to encourage archival work throughout the state. Arkansas History Commission received a $25,000 grant to survey targeted county collections, and a small archivists association has been organized. Identify existing collections, promote knowledge of preservation techniques and establish technical assistance capabilities (taken from FY85 goal). Task force has been established to explore potential for a conference or series of meetings in this field.

- American Archivist

Basic Archival Conservation Program, two day workshop, 1984. Deals with problems in archival conservation. Open to members of manuscript and archival repositories with little or no conservation training.

- American Association for State and Local History

"Care and Conservation of Collections," three specialized seminars, four days each. Sessions deal with documentation of collections, proper procedures for handling and storage, conservation, etc. Admission is limited to 25 applicants, paid or volunteer staff members of historical societies or museums.

- American Horticultural Society

Annual meeting and spring symposiums have open session on native wildflower plant conservation.

- Alabama Museums Association

Two-day workshops have included topics such as "What to do till the Conservator Comes," and "Your Future and Conservation."

- American Antiquarian Society

Two-day workshop for Worcester county librarians dealing with disaster planning.

- Association for Preservation Technology

Cosponsor with National Trust and National Park Service, three-day technical workshop on successful rehabilitation, given in three locations 1984. Also annual meeting.

- Atlanta Historical Society

Offers sessions on collections care for museum professionals other than conservators.

- Arizona Commission on the Arts

Collections care workshop: one-day workshop on exhibition and storage of environmentally sensitive collections, using museum Environment Test kit. Workshops repeated four times in four locations.

- Center for Conservation and Technical Studies.

Presents seminars for museum professionals and students to familiarize participants with the latest methods used in the conservation and technical examination of works of art, 1977-present. Often co-sponsored by other organizations such as the New England Museum Association.

Two-day seminar for students in the Museum Training Program; introduction to museum conservation.

- Center for Building Conservation

Conference and workshop, Oct. 1983. "Conservation of Bronze and Masonry in Park Environments," co-sponsored with the Central Park Conservancy. Two-day seminars on conservation techniques offered to all professionals connected with conservation.

- Campbell Conservation Center

Sponsors series of workshops on the care of collections, wooden buildings and architectural preservation, 1982 to date. Co-sponsors with Smithsonian Institute a two-day workshop on collections computerization.

- Clinton-Essex-Franklin Library System

Library and historic conservation one-day workshops and seminars from 1977 to date. Topics include "Local Conservation Efforts: What we can Do Ourselves," "Care and Repair of Wooden Folk Musical Instruments," and, "Maintenance and Simple Repairs of Semi-Rare Books and Papers."

- The Drawing Center

Presents annual series of two-day paper conservation workshops, 1984. Topics include "New Media, New Methods, Old Ways," "Proper Preservation of Works on Paper."

- Early American Industries Association

Has presented numerous sessions on antique tool restoration, cataloging and collections management.

- Federation of Historical Services

One and two-day workshops on conservation and collections maintenance. Topics have included storage and handling, exhibiting and conserving textiles, historic photographs, and decorative arts, and pest control. Oftentimes co-sponsored by organizations such as the New York State Conservation Consultancy, Albany Institute of History and Art, New York State Office of Parks and Recreation, Division of Historical Preservation and New York State Library. Designed for member organizations to explain conservation procedures and demonstrate what staffs can or cannot do on their own.

- Historic Deerfield, MA

One-day architectural restoration forum, 1984.

- Historic Madison/University of Wisconsin

Old House Preservation Workshop, one day program, 1979. In 1981, series of workshops for the local historian, sponsored by the State Historical Society, featured collections management issues.

- Humanities Research Center, University of Texas at Austin

Annual two-day seminar in conservation of archival materials.

- Intermuseum Laboratory Association

Two day technical seminars, "Lighting for Cultural Institutions," 1984 and "Art in Transit," 1983.

- Kansas Arts Commission

Workshop on conservation at annual meeting of Kansas Museum Association, October 27-28, 1983. Sessions included "The Care and Treatment of Three Dimensional Objects."

- Maine State Museum

Cosponsors with Maine League of Historical Societies and Museums and the Maine State Commission on the Arts and Humanities, a one-day seminar for museums and historical societies in Maine, New Hampshire and Massachusetts on conservation for the small museum. Presented at three locations.

- The Metropolitan Museum of Art

Museum Workshop Program from 1978 to the present have included such topics as "Care and Management of Photographic Collections," "Care and Maintenance of Textile and Costume Collections," "Conservation, Exhibition and Interpretation of Carriage Collections." Often held in collaboration with the Northeast Document Conservation Center. Three-day workshops for current staff of museums, trustees, historical societies and university galleries.

- Montana Art Gallery Directory Association

Museum professional workshop, new series in 1984 to introduce, examine and improve skills of museum employees. Sessions on technical side of hosting exhibitions; for member museums.

- Missouri Committee for the Humanities

One-day workshops for volunteers who work with the Missouri Historical Society's collections, 1983. Also, "Learning to Look," two-day conference for historic societies and museums on proper methods of cataloguing, conserving and repairing museum artifacts.

Collections Management Workshop for Historic Costumes Collection, 1983. One-day discussions including "Care and Handling for Historic Costumes," and "Dating and Cataloging Procedures for Historic Costumes."

Western Historical Manuscript Collection, 1983, "Conservation Microfilm and Microfilm Conservation," two-day symposium. For public librarians, college and university librarians, archivists and manuscript curators.

Conference for historical societies and museums presented information on the need and proper methods for cataloguing, conserving, repairing, and using paper objects, photographs, art objects and museum artifacts.

- National Trust for Historic Preservation

Co-sponsors conferences that address subjects of particular importance to historic preservation.

- New England Museum Association

Workshops on collections care and conservation.

- New York State Historical Association

Presents workshops for national, regional and local groups.

- New England Commission for the Humanities

Funded workshops which included a lecture/demonstration session and was sponsored by the State Historical Society.

- New York University, Institute of Fine Arts

One-day symposiums in 1983 on textile conservation and "Training in Conservation: A Symposium on the Occasion of the Dedication of the Stephen Chase House."

- New York Council for the Humanities

Two-day conference, "Sleepy Hollow Conference on Interpretive Issues for Outdoor Museums and Historic Houses," 1983. Sessions often include conservation topics presented by curators, museum educators, designers, historians and anthropologists. Co-sponsored with museum workshop program, Sleepy Hollow Restorations and NYSCOA.

- New York State Conservation Consultancy Seminar Program

Series of one-day seminars on the care and maintenance of collections, intended for the small or medium size museum and often the public. Held at various locations in the state three times a year.

- New York State Council on the Arts

Two-day workshops on collections care. For example, "Care and Management of Photographic Collections," 1984.

- Nordic Heritage Museum, Seattle

One-day workshop on textile care and preservation, for small museums and collectors with textile and costume collections.

- Northeast Document Conservation Center

Offers numerous seminars and workshops at various locations aimed at creating an awareness of conservation needs and providing information on conservation management. Staff is available to provide programs for member institutions or associates.

- Northeast Museums Conference

Offers one-day workshop prior to annual meeting. Topics include the care and conservation of wooden objects, workshop for curators, 1984.

- Ohio Museums Association

Sponsors workshops.

- Office of Personnel Management & Advisory Council on Historic Preservation

"Introduction to Federal Projects and Historic Preservation Law," two-day professional training seminar for anyone involved with a federally funded project that affects historic properties or archaeological sites.

- Philadelphia Museum of Art

Organized one-day conference on "Packing of Art Objects and Artifacts," 1983.

- Preservation Institute for the Building Craft

One-day forums for building contractors, "Preservation Building Skills: Good for Buildings, Good for Business," 1983, and "Planning Profitable Preservation Projects," for craftspeople, builders, contractors and architects, 1984.

One day workshops have included "Architectural History/Dating of Buildings," repeated in three locations; "Window Treatments," repeated twice.

- RESTORE PHILADELPHIA, INC.

Sponsors various workshops for professionals in the building craft.

- Rocky Mountain Regional Conservation Center

Lectures and workshops, often given at Colorado/Wyoming Association of Museums meetings.

- Smithsonian Institution

Co-sponsors one or two workshops per year on-site throughout country, 1985. Two-day specialized program "Conservation Awareness and Preventive Care: Textiles and Furniture," co-sponsored with Virginia Association of Museums. Also planning international workshops.

- Society for the Preservation of New England Antiquities

Organizes and cosponsors with New England museums and other organizations, seminars, workshops and conferences of differing lengths. For example, "The Care and Feeding of Old Houses," three-day seminar for architectural conservators, at Springfield Historical Society. Also a four-part conservation program planned for fall 1984 at Codman House, will include presentations on conservation of specific artifacts in Codman House. Other workshops (1983) on "Building Conservation", October 15, 29, 1983; "Repairing your Historic House;" and "Good Housekeeping Workshop." These two workshops limited to Massachusetts representatives from organizations. Included lecture on "Care of Wooden Furniture and Finishes."

- Society for American Archivists

Series of twelve two-day basic workshops given at museums and universities throughout the country, 1981 to date. Topics have included photograph and conservation workshops, 1982; administration of photographic collections workshops.

- State Historical Society of Colorado

Funded through Grand County Historical Museum, a one-day workshop on textile care for museum professionals, 1983.

- Tennessee State Museum, Nashville

Sponsors "Conservation Management Workshop," intended primarily for museum personnel other than professional conservators.

- Textile Conservation Workshop

Organizes one-day workshops on a variety of topics including "Costume Identification and Collection Management," 1983; "Developing an Archival Program," 1983; "Care of Textiles," 1983; "Basic Textile Conservation for Small Museums," 1982. For museum personnel from museums with limited funds and no conservation facilities. Designed to provide guidelines in basic care, handling and storage of collections.

- Upper Midwest Conservation Center

The two-day conference, 1984, on "The Care of Far Eastern Pictorial Art," offered lectures and workshops designed to provide curators and directors who maintain collections of Oriental pictorial art with theoretical knowledge and hands on experience.

- Virginia Association of Museums

One and two-day workshops throughout the state. Topics have included "Care and Handling of Works of Art," 1979; "Conservation Awareness," 1982; and "Fumigation," 1982. Annual meeting sessions included "Conservation Awareness," 1980 and "Conservation Care of Furniture," 1984.

- Williamstown Regional Art Conservation Lab, Inc.

Regional workshops, 1978 to the present. Co-sponsors conferences with FAIC. Workshop on collections care with informal demonstrations, 1984.

Lectures

- American Association of Museums

Lectures and panel discussions during annual meeting on a variety of conservation and collections management topics. 1984 topics included "Establishing a Conservation Program in a Smaller Museum," "Making Conservation a Higher Priority for Museums and Funding Sources," "Strategies for Collections: A Report on an NEH-Funded Project," "Macro Restoration," "Beyond the Big Data Base: Collection Management by Computer."

AAM annual regional meetings include discussions and one day workshops on conservation and collections management. For example, the Mountain-Plains Museums Association, 1984, session on museum storage topics.

- American Association of State & Local History

Annual meeting presents lectures and workshops on topics including preservation.

- Arizona Commission on the Arts/Prescott Historical Society

1981 lectures series repeated at four locations included "Care of Textile Collections," "Care of Paper Documents and Works of Art on Paper," and "Care of Photographic Collections."

- Association of Railway Museums

Holds an annual convention which emphasizes upgrading restoration efforts by railroad museums.

- American Association for Zoological Parks and Aquaria

Five annual regional conference include lectures and panel discussions on a variety of conservation and collections management topics. For example, Northeast Regional Conference, 1984, the wildlife survival center with training program.

- Balboa Art Conservation Center

Often members lecture on objects examined or treated in the lab.

- Bay Area Conservation Guild

Members give lectures and participate in panel discussions once a month. Topics include conservation of paper, paintings, textiles, Oriental art, ethnographic art, bookbinding and chemistry (as related to conservation).

- Humanities Research Center, University of Texas at Austin

Lectures in conjunction with "Conservation Archival Materials," two-day seminars given annually. Began in 1982.

- Indiana University at Bloomington

Offers graduate seminar lectures for museum studies students. Conservators speak on "Career Nights." Art history and museum studies courses include discussions of conservation. Topics include "Restoration of Works of Art," and "Introduction to Methods and Sequence of the Technical Exam of Paintings."

- Kentucky History Museum

One or more lectures each year during annual meeting on a conservation topic. Topics have included "Conservation of Modern Works of Art."

- Maine State Museum

Regularly presents lectures on conservation.

- New York State Conservation Consultancy

Offers lectures and seminars.

- State University College at Buffalo, Department of Conservation of Historic and Artistic Works

Faculty lectures on various aspects of art conservation.

- Textile Conservation Workshop

Staff lecture and present informal discussions on care, proper handling, storage and display of textiles at variety of institutions around the country.

- Western Historical Manuscript Collection

Paper conservation demonstration as part of open house, and MLA annual meeting, "Can this Document be Saved," 1983.

- Washington University Technological Associates/Center for Archeometry

Sponsors several lectures each year for university and neighboring communities on various conservation topics. Staff lectures throughout the country.

Consultancy Programs for Museums

- American Association of Museums

Museum Assessment Program, Phase II focuses on the collections management plans, policies and procedures of museums.

- American Association for State and Local History

Consultant service for care and conservation of collections. Museums and historical agencies that have active collections programs in need of general assistance are eligible. Cost depends on institution size and grants available.

- Arizona Commission on the Arts

Currently preparing a museum evaluation and technical assistance program designed to update the level of performance of smaller museums in Arizona. Also, Museum Environment Test Kit rentals, 1983.

- Art Conservation Lab, Inc.

Offers variety of services in the areas of preventative maintenance, and environmental controls; illustrated lectures and workshops on conservation care. Clients include individual collectors, museums, corporations, schools, etc. Emergency services are available on a 24-hour basis.

- Association of Railroad Museums

Provides information pertaining to historic preservation and rehabilitation of railroad equipment.

- Balboa Art Conservation Center

Offers services to members and other nonprofit publicly supported institutions.

- Bonner & Co.

Provides conservation services for fine and decorative arts and cost estimate treatment proposals.

- Conservation Center for Art & Historic Artifacts.

Consultation and in-depth examination of individual objects; environmental, storage and display conditions. Assists member institutions in developing long range preservation planning and stabilization of collections. Membership is primarily from, but not limited to, Mid-Atlantic States region.

- Conservation Analytical Lab, Smithsonian Institution

Provides scientific conservation services to all Smithsonian Institution curators and conservators. Information section of CAL maintains data from various sources, which is available to conservators NIXDORF, digital VT100, which is able to tap into a conservation network in the United Kingdom.

■ Center for Conservation and Technical Studies, Fogg Museum/Harvard University

Organized "Art Care Survey Teams" to determine needs of collections of smaller organizations and assist these groups in determining priorities for conservation.

■ Federation of Historical Services

Provides site visits and day long workshops for historical institutions dealing with basic collections maintenance; part of technical assistance program which provides telephone and mail referrals.

■ Iowa State Historical Society

Staff answers requests for information through slide shows, workshops, lectures and cooperation with the School of Library Science at the University of Iowa.

■ Iowa Arts Council

Developing with Iowa Museum Association, a Technical Assistance network program for the state to be operational in 1985-86. Will provide technical information exchange through consultations, workshops and seminars. Goal is to increase the level of professional standards of Iowa museums, galleries and historical organizations, provide assistance to emerging museums and develop a dialogue between individuals with a commitment to preservation.

■ Louisiana Commission for the Humanities

"Tilling the Fields, Cultivating the Humanities in Museum Programs," effort to create an information clearinghouse for state museums that will ultimately provide a statewide collections inventory.

■ Massachusetts Council on the Arts and Humanities

Collections Management Program supports service organizations and conservation facilities in providing surveys and workshops dealing with many aspects of collections care. Provided support of collections surveys of over fifty institutions in the past two years. Supports service organizations and conservation facilities in providing surveys and workshops on collections care (since 1983)

■ Merrimack Valley Texile Museum

Provides expertise and services to museums, institutions and individuals. Surveys, reports and other services.

■ National Council for Preservation Education

Coordinates efforts related to preservation education, publishes list of colleges and universities that offer conservation disciplines.

- National Trust for Historic Preservation

Preservation Services Fund makes grants in two categories including 1) consultant services to provide funding for professional advice on specific preservation projects; 2) preservation education to support program development at elementary through post graduate levels.

- Northeast Document Conservation Center.

Provides full range of conservation services including climate control, storage and planning of conservation programs for small historical societies, libraries, etc.

- New York State Parks/Bureau of Historic Sites

Referral services, recommends treatment centers.

- New York State Conservation Consultancy

Resource center located at the Cooper-Hewitt Museum. Consultancy program for museums and historic societies in New York state. Small museums may obtain services of conservators to survey collections storage, display and treatment needs. All services are advisory. Lectures, seminars and publications about storage problem solutions, emergency planning, etc.

- Pennsylvania Historical and Museum Commission.

Commonwealth conservation center will open in early 1985 to provide surveys and treatments for Pennsylvania museums and historical societies.

- Regional Conference of Historical Agencies

Two-year cooperative project with Federation of Historic Services, Lower Hudson Conference and the Division of History and Anthropology Services of New York State Museum to establish computer network for information exchange.

- RESTORE PHILADELPHIA INC.

Provides for exchange of ideas with professionals in the preservation field.

- Rocky Mountain Regional Conservation Center

On-site collection surveys, consultation on special problems.

- Society for American Archivists

Consultant service began in 1981. Assists institutions in evaluating environmental conditions, collections maintenance, security, exhibition practices and archival procedures.

- Society for the Preservation of New England Antiquities

Consultants on a local, state, regional and national basis. Site visits to institutions with furniture collections.

- Wyoming Council for the Humanities

Sponsors Wyoming Museums Assessment Program questionnaire, 1984. Also has extensive conservation laboratory facilities.

- Virginia Museum of Fine Arts

1979-81 conservation outreach project included statewide gallery condition evaluation program collections maintenance workshops.

- Washington University Technology Associates, Center for Archeometry

Maintains extensive library and photographic archives; serves as a clearinghouse for conservation information with a special focus on sculpture conservation and history of sculpture. Consultant services include stone and metal conservation for architects working on historic conservation projects; emergency services; documentation and technical examination. Research services, technical exam and conservation treatment of metals and stone provided.

- Williamstown Regional Conservation Lab.

Provides technical advice, consultation services and assesses conservation needs.

Film/Video Programs

- American Institute for Conservation

Many programs at the annual meeting are recorded and available for purchase.

- American Association for State and Local History

Audio-visual training kits for professionals and volunteer staff in historical agencies. Forty-three topics available including historic house conservation series.

- Federation of Historic Services

1983 program on decorative arts conservation with slide show of case studies.

- Freer Gallery of Art

"Art of the Hyogushi," film on techniques of Japanese restoration; used for docent training.

- Minneapolis Institute of the Arts

See exhibition section.

- National Trust/Smithsonian Institution

Films and video available for loan from audio-visual collections of the National Trust. Subjects include "Caring for History," shows restoration techniques: "Art Heritage," discusses exhibit techniques, conservation and storage; "Art of the Conservator," detailed approach to treatment of oil paintings.

- North Carolina State University

Videotaped credit courses in textile science and technology, part of their textile off-campus televised education program.

- Regional Conference of Historical Agencies

Films are available for rent.

- Preservation Institute for the Building Craft

Films used in forums, for example, "Preserving Building Skills: Good for Buildings, Good for Business," 1983.

- Society for the Preservation of New England Antiquities

Furniture conservation slide tape, 1984. Prepared for national distribution, considers environmental causes of damage, recommends practices and procedures for furniture conservation.

- Smithsonian Institution

Audio Visual Program for museums, 1981 to the present consisting of slide programs, audio cassettes and accompanying booklets, prepared for museums and other cultural institutions. Topics include conservation series of over twenty specific topics.

- State Historical Society of Wisconsin

"The Fragile Record," slide and tape presentation for the conservation layman on conservation of historical resources.

Publications

- American Association of Museums

Reprints available from Museum News; articles on conservation and collections management, publications on museum registration, security and related subjects.

- American Institute for Conservation

Publishes announcements of graduate programs in conservation, preprints and proceedings of annual meeting, technical articles in organization periodical.

- Arizona Commission on the Arts

Museum Environment Test Kit includes ultraviolet meter, lux meter, psychometer and blue scale fading cards for measurement of relative humidity, ultraviolet and visible light levels for use in museums, libraries and archives. Accompanying manual of instructions by Barbara Moore. The Museum Environment by Garry Thompson completes the kit. Available for one week rentals at $15 and one way shipping.

- American Association for State and Local History

Publishes leaflets, educational materials and books on such subjects as Care and Conservation of Collections, Museum Cataloguing, Technical Leaflets: Collections Care Series.

- Art Museum Association

Technology in Museum Environments is an example of available publications.

- Association for Preservation Technology

APT Communique (bi-monthly newsletter, 1972 to date) and APT Bulletin (quarterly publication, 1969 to date, provide up-to-date information on preservation technology.

- Association of Railway Museums

Pamphlets on the care and maintenance of steam locomotives. Reprints of early technical manuals, for example, Care and Maintenance of Steam Locomotives, by J. David Conrad, 1974. Quarterly newsletter.

- Association of Science Technology Centers

Publishes books, conference proceedings, surveys on museum evaluations, computers in museums, effectiveness of explanatory labels in museums, and others. Bi-monthly newsletter.

- Association of Systematics Collections

Pest Control in Museums, 1981 and other publications.

- Balboa Art Conservation Center.

Quarterly newsletter. Contains current technical information, observations and miscellaneous news. Distributed to member organizations and to unaffiliated persons for a nominal yearly fee.

- Center for Conservation and Technical Studies

Three illustrated monographs on technical research projects undertaken at the Fogg, 1981.

- Council for Museum Anthropology

Publishes quarterly newsletter that includes articles, notes and general news on all facets of conservation and collection management. Audience: anthropologists and related professionals who practice within the museum environment.

- Intermuseum Conservation Association.

Newsletter.

- Library of Congress

Provides pamphlets, publications and bibliographies. Some subjects include Preservation of Library Materials, 1982; Paper and its Conservation, 1983; Marking Paper Manuscripts, 1983.

- Louisiana Commission for the Humanities

Articles in Historic New Orleans Collection Newsletter, 1983, on "Preservation of Rare Books," and "Preservation of Family Papers."

- Mass COPAR

Records in Architectural Offices: Suggestions for the Proper Organization, Storage and Conservation in Architectural Office Archives, 1981. Architectural Records in Boston: A Guide to Architectural Research in Boston, 1983.

- National Association of Staff Archives and Records Administrations

Clearinghouse, newsletter. Covers public records management field.

- National Institute for Conservation

"Careers in Conservation of Cultural Property," pamphlet. Series of studies on conservation issues such as "Conservation Treatment Facilities in the United States," 1980; "Report of the Study Committee on Education and Training," 1979; "Suggested Guidelines for Training in Architectural Conservation," 1980.

- National Trust for Historic Preservation

The Brown Book, edited by Diane Maddox and Ellen Marsh; directory of preservation information including names, addresses and telephone numbers of key preservation organizations.

- New York State Conservation Consultancy

Series of bulletins on collections care include: "Basic Principles of Storage," "Storage of Archival Documents and Works of Art on Paper," "Disaster Planning, Storage of Historic Fabrics and Costumes."

- Philadelphia Museum of Art

Packing literature made available to professionals, compiled by T. Farley. Titles include: "Safeguarding your Collections in Travel," C. Keck; "Art Objects: Their Care and Preservation," F.K. Fall.

- Pennsylvania Academy of Fine Arts

As a result of the 1983 Conference on Outdoor Sculpture, book will be published that will include list of treated outdoor sculpture.

- Ohio Historical Society

Articles, pamphlets and books on the latest preservation techniques.

- Regional Conference of Historical Agencies

Publishes technical information sheets such as "Caring for Your Painting Collection," "Care and Storage of Photographic Materials."

- Rocky Mountain Regional Conservation Center

Conservation News, newsletter published four times a year, for the center's clients. Information sheets on care and exhibition of objects.

- Smithsonian Institution

Museum Reference Center, resource center for publications on all phases of museum activities.

- Society of American Archivists

Archives and Manuscripts: Conservation, M.L. Rizenthaler, 1983. Also publishes many informational leaflets, such as "A Basic Bibliography for Conservation," "Implementing a Conservation Program," and "Uses of Technical Knowledge of Photographic Processes in Archival Collections."

- Technology Organization, Inc.

Technology and Conservation, four issues per year.

- Texas Historical Commission

Technical literature on conservation topics.

- Textile Conservation Workshop

Publishes educational material including "Recommended Textile Storage Techniques," "Exhibition Guidelines for Costumes," "Textile Care," and selected bibliographies on textile care including collections management, all suitable for the paraprofessional.

- Virginia Association of Museums

"Vamgram" monthly newsletter, includes articles about the William and Mary Conservation Center.

- Washington University Technological Associates/Center for Archeometry

Bibliographies on specific topics and a manual for maintenance of outdoor bronze sculpture.

APPENDIX A

Letter Requesting Information

April 26, 1984

Dear Colleague:

The American Association of Museums, in cooperation with the National Institute for Conservation and the American Institute for Conservation, is engaged in a study to survey the conservation needs of the nation's museums.

As part of this project, we are asking regional conservation labs, state and local arts organizations, and museum service organizations to send us bulletins, brochures, catalogues and other material describing recent training and public awareness programs about conservation. We are interested in, for example, workshops for museum professionals on the proper handling of objects, exhibitions with a conservation component, public lectures on conservation of collections and other similar projects. We would also like to know the duration of the programs, their scope and targetted audience and the number of participants in each.

We would appreciate receiving your information as soon as possible in order to be included in this portion of the project. Please send your information to my attention at the American Association of Museums.

Thank you.

Sincerely,

Susan J. Bandes
IMS Project Director

SJB:ld

APPENDIX B

Alphabetical Listing of Host Organizations of Information and Training Programs

The 113 organizations listed below submitted materials on their conservation information and training programs.

Advisory Council on Historic Preservation
African American Museums Association
Alabama Museums Association
American Antiquarian Society
American Archivist
American Association for State and Local History
American Association for Zoological Parks and Aquaria
American Association of Museums
American Historical Association
American Horticultural Society
Arkansas Endowment for the Humanities
Arizona Commission on the Arts
Art Conservation Laboratory
Art Museum Association of America
Association for Preservation Technology
Association of Railway Museums
Association of Science Technology Centers
Association of Systematics Collections
Atlanta Historical Society

Balboa Art Conservation Center
Bay Area Conservation Guild
Bonner and Company

Campbell Center for Historic Preservation Studies
Center for Building Conservation
Center for Conservation and Technical Studies, Fogg Art Museum
Cincinnati Art Museum
Clinton-Essex-Franklin Library System
Colorado State Historical Society
Conservation Center for Art and Historic Artifacts
Conservation Analytical Lab, Smithsonian Institution
Council for Museum Anthropology

The Drawing Center

Early American Industries Association

Federation of Historical Services
Field Museum of Natural History
Foundation of the American Institute for Conservation
Freer Gallery of Art, Smithsonian Institution

Historic Deerfield
Historic House Association of America
Historic Madison/University of Wisconsin
Humanities Research Center, University of Texas Conservation Department

Indiana University, Office of Adult Education and Continuing Studies
Indiana University, University Art Museum
Intermuseum Conservation Laboratory
Iowa Arts Council
Iowa State Historical Department, Office of the State Historical Society

Kansas Arts Commission
Kentucky Historical Museum

Library of Congress
Louisiana Commission for the Humanities

M.H. De Young Museum, San Francisco
Maine State Museum
Mary Washington College Center for Historic Preservation
Mass COPAR
Massachusetts Council on the Arts and Humanities
Merrimack Valley Textile Museum
Metropolitan Museum of Art
Minneapolis Institute of the Arts
Missouri Committee for the Humanities
Montana Art Gallery Directors Association

National Association of Staff Archives and Records Administration
National Audubon Society
National Council for Preservation Education
National Institute for the Conservation of Cultural Property, Inc.
National Preservation Institute
National Trust for Historic Preservation
National Wildlife Federation
Nature Conservancy
New England Commission for the Humanities
New England Museum Association

New York Conservation Consultancy (Cooper-Hewitt, Museum)
New York State Council of the Arts
New York State Historical Association
New York State Parks and Recreation/Bureau of Historic Sites
New York University-Institute of Fine Arts
Nordic Heritage
North Carolina State Museum
Northeast Document Conservation Center
Northeast Museums Conference

Ohio Historical Society

Pennsylvania Academy of Fine Arts
Pennsylvania Historical and Museums Commission
Philadelphia Museum of Art
The Preservation Institute for the Building Crafts

RARE - Rare Animal Relief Effort, Inc.
Regional Conference of Historical Agencies
RESTORE Philadelphia
Rochester Institute of Technology
Rocky Mountain Regional Conservation Center

Smithsonian Institution, Museum Support Center
Smithsonian Institution, Office of Museum Programs,
  Audiovisual Training Aids
Smithsonian Institution, Traveling Exhibition Service
Society of American Archivists
Society for the Preservation of New England Antiquities
State Historic Society of Wisconsin
State University of New York at Buffalo, Cooperstown

Technology Organization, Inc.
Tennessee State Museum
Texas Historical Commission
Textile Conservation Workshop
Textile Museum

University of Delaware
Upper Midwest Conservation Association

Vermont Council on the Humanities and Public Issues
Virginia Association of Museums
Virginia Museum of Fine Arts

Washington University Technology Associates, Sculpture
  Conservation Laboratory
Western Historical Manuscript Collection
Williamstown Regional Art Conservation Lab

Wisconsin Council for Local History
Wisconsin Humanities Committee
World Wildlife Fund
Wyoming Council for the Humanities

PROJECT 4: PRIVATE-SECTOR SUPPORT OF COLLECTIONS NEEDS

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PRIVATE-SECTOR SUPPORT OF COLLECTIONS NEEDS

INTRODUCTION

Local organizations, corporate foundations and independent foundations support conservation and collections management at greatly varying levels. National support has been provided by independent foundations such as the Andrew W. Mellon, Kresge, Samuel H. Kress and Ford foundations, and over the years, these four organizations together have provided the greatest level of support for specific conservation activities.

Local funding of conservation does not appear to follow a consistent trend and most local organizations, when compared to the national foundations, have smaller budgets and award fewer numbers of grants at smaller dollar amounts. There is encouraging evidence that corporate giving, which is often local, is beginning to increase.

0 The challenge and matching grant programs of several of the federal funding agencies were developed with the intent of stimulating private support. For example, the National Endowment for the Arts' challenge grant program requires a 3 to 1 match in order to obtain federal dollars. The Institute of Museum Services' conservation grant program required a 1 to 1 match for its funds during its first year. The result has been a combination of public and private support for collections needs.

An example of the success of this approach is provided by the recent conservation project of the Skirball Museum of the Hebrew Union College in Los Angeles. With grant funding, the ceremonial and domestic textiles in the museum's collection were first surveyed, the preservation needs assessed and storage facilities were refurbished. Over 50 of the most important pieces in the collection were conserved. They were then placed on view in a special exhibition entitled "From Wardrobe to Worship: A Jewish Textile Tradition." The four-year project was funded by an NEA grant that was matched with money from the Kress Foundation, Gladys Turk Foundation, Henry Kramer Memorial Fund and contributions from individuals.

Independent foundations and corporate foundations have developed their own matching grant programs, as well as other innovative ways to deliver support. The Cincinnati Art Museum benefited from contributions donated in sums ranging from 5 cents to 5 dollars by the American Express Company whenever anyone used an American Express product or service in the Cincinnati area. A total of $32,000 was raised in this way to conserve Benjamin West's painting "Ophelia and Laertes" in the museum collection.

A highly publicized fund raising project for conservation is the Statue of Liberty restoration. It has generated a high level of public awareness of the conservation needs of major American monuments. The Statue of Liberty-Ellis Island Foundation has targeted interest groups through a national advertising campaign that includes television spots and advertisements in magazines such as Newsweek and Time. It has succeeded in attracting donors at all levels, from private citizens to corporate sponsors such as Stroh's Brewery, U.S. Tobacco, the Kellogg Company, Eastman Kodak, USA Today, and Avon Products.

In general, national and local organizations that support museums have been more apt to fund highly visible exhibitions rather than the invisible functions vital to the welfare of museum collections. Nevertheless, conservation funding sometimes is included as a component of a grant for a major exhibition. This happened with Philip Morris' recent support of "The Vatican Collections: The Papacy and Art," which provided for the treatment of a majority of the works before they were placed on public display.

Private-sector support for conservation-related activities has been awarded for a variety of activities: the purchase of laboratory equipment, the establishment of endowments for conservation laboratories, conservation treatment of specific museum objects, and scientific research among others. Conservation training programs at universities, museums and cooperative conservation centers, as well as fellowships for graduate students, have also received funding.

SOURCES OF INFORMATION ON PRIVATE-SECTOR SUPPORT

To examine ways in which the private-sector supports collections needs, the AAM staff conducted research at the Foundation Center in Washington, D.C. The Foundation Center is an independent national service organization established by foundations to provide an authoritative source of information on philanthropic giving. The Center maintains national libraries in New York city and in the District of Columbia, and operates as a direct resource to approximately 140 public and private foundation libraries in all 50 states.

The staff at the Foundation Center researches philanthropic giving by the private-sector in the United States, and makes available its findings to the general public. The Center uses two methods of collecting information on private giving: 1) the staff examines the Internal Revenue Service records that are required by law to be filed annually by U.S. foundations (Form 990-PF); and 2) the staff collects and reviews annual reports and other factual information that may be published by the foundations themselves. The Center maintains information on approximately 23,000 U.S. foundations.

According to the Foundation Center, no more than 16 percent of foundations publish annual reports. Most of the information at the Center is based on records that the IRS makes available two years after the original date of filing. The information contained in this report is based on research conducted at the Foundation Center during 1984 and includes information on private giving through 1982.

SUPPORT FOR CONSERVATION

Independent Foundations

Only a few of the 23,000 foundations that are listed at the Foundation Center regularly support projects in conservation and documentation. Among the 36 independent foundations listed at the Foundation Center as contributors, the Andrew W. Mellon Foundation of New York has been the largest single supporter of conservation, awarding a total of $422 million during the eight year period analyzed. Except for 1976 (the first year reported at the Foundation Center) when Mellon's conservation funding amounted to $650,000, the average annual expenditure has been $3.5 million.

A large portion of Mellon support ($2.4 million) has gone to training programs at the three graduate-level, degree-granting conservation institutions: the Institute of Fine Arts, New York; Winterthur-University of Delaware; and the Art Conservation Department of the State University College at Buffalo, SUNY (formerly Cooperstown). Eight regional laboratories have received $2.68 million for startup costs, general operation, and the training of student interns. Nine museums received a total of $1.8 million. Income from these endowment funds (which required a one-to-one match during a period of three years) is used to support conservation internships at these laboratories as well as other laboratory needs.. The museums that received this funding are: the Art Institute of Chicago; the Cleveland Museum of Art; the Detroit Art Institute; the Kimbell Art Museum; the Los Angeles County Museum of Art; the Museum of Fine Arts, Boston; the Metropolitan Museum of Art; the Philadelphia Museum of Art; and the Walters Art Gallery. The Mellon Foundation has also supported projects in conservation science and the efforts of the National Institute for Conservation. Recently, the foundation gave endowment funds to approximately 20 museums for the purpose of supporting the documentation of their collections.

The Samuel H. Kress Foundation provides support in several areas of conservation. These include grants for advanced independent training awarded on the basis of an open competition, funding for training programs and conservation internships, and grants to enable the exchange of conservation expertise. The Kress Foundation also supports the actual treatment and restoration of monuments. Between 1975 and 1981, the Kress Foundation awarded $637,000 to support conservation-related programs. Approximately 35 percent of this funding was for training programs, while the remainder was applied to treatments. Grants range from several months to several years in duration, from a few thousand dollars to more than $100,000.

Between 1977 and 1982 the Kresge Foundation of Michigan awarded four grants totaling $1.09 million to several large museums for collections maintenance. Improved climate control and security, the purchase and installation of storage units, the construction of an analytical laboratory and the renovation of conservation facilities were funded.

The Ford Foundation of New York does not generally support conservation, although in the past it has contributed to international conservation projects. Betweeen 1978 and 1982, it spent a total of $71,233 to assist four projects in developing countries, including support for the purchase of laboratory equipment and the training of conservators in Thailand and Pakistan.

Since 1981, the Charles Ulrick and Josephine Bay Foundation has made two grants to fund condition surveys and conservation training. The first was awarded to the Northeast Documentation Conservation Center to conduct surveys of museum collections. The second was to the American Association of State and Local History to provide conservation workshops for curators. On the basis of the success of these two pilot projects, they have recently decided to award additional funds for conservation. The Bay Foundation also funded a three-year project in conjunction with the American Association of Zoo Veterinarians to provide research money to 15 to 20 institutions in a unique effort aimed at targeting the conservation problems of the zoological community.

In October 1984, the J. Paul Getty Trust initiated an international grant program that will provide support for three specific conservation activities: training of conservators, including first- and second-year internships; conservation of major works of art in museum collections; and surveys of the conservation needs of small art museums. Funding for the first two categories is available for up to three years, and treatment grants must be matched.

Company-sponsored Foundations

Funding for conservation by corporate foundations has been at a much lower level than that by independent foundations. Of the 15 largest corporate foundations listed by the foundation Center in Foundations Today, 1984, one is known to have contributed to conservation projects. The Dayton Hudson Foundation awarded $10,000 to the Thomas Gilcrease Museum in Tulsa in 1981 for the establishment of a conservation laboratory, and contributed to the Denver Art Museum in 1980 for the treatment of objects. As already mentioned, some corporate foundations make portions of an exhibition grant available for conservation. Another example of this, similar to the Philip Morris support of the Vatican show, was the American Express funding of the El Greco of Toledo exhibition.

Respondents to the museum collection survey reported corporate support by their museums for conservation and collections management. In one year, 1983, the reported total exceeded $500,000; in most years totals were below $250,000.

In Foundations Today, the Foundation Center reports that while the number of corporate foundations has increased rapidly over the past few years, these funding sources do not have endowments or reserve funds as do independent foundations. It is unclear whether their current level of giving, dependent on the net profit of the parent company, will increase, decrease or stabilize in the future. The Foundation Center also concludes that these foundations are most likely to give to programs that reflect the interests of the parent company and that are located in the geographical area where the parent company operates. Historically, corporate foundations have funded conservation on a project-to-project basis.

Conservation Support on the Local Level

Community foundations vary greatly in size and of the 15 largest listed by the Foundation Center, six have supported conservation projects in the past. Included among these are the Hartford Foundation for Public Giving which awarded $150,000 in 1977 to the Wadsworth Atheneum for its conservation training program, and $35,000 in 1982 to the Connecticut Historical Society for the purchase of storage units; the Cleveland Foundation, which awarded $51,230 to the Intermuseum Conservation Association at Oberlin for the purchase of equipmenmt; the St. Paul Foundation, which gave $109,000 in 1981 to the Minnesota Historical Society for its conservation laboratory; and the Permanent Charity Fund of Boston, which contributed $20,000 to the US Constitution Museum for the preservation of artifacts in the collection.

These examples illustrate several characteristics of community foundation giving. First, awards are most often given to local institutions. Second, this money is given for a variety of projects to a diverse number of institutions. Regional conservation centers have purchased laboratory equipment, renovated, expanded, and developed facilities with more than $250,000 in local support consisting of individual grants ranging from $5,000 to $150,000. Other funds have supported the visiting consultancy of a wood conservator from Japan and the purchase of an infrared vidicon system for a laboratory. The Field Foundation of Illinois awarded $18,500 to the Adler Planetarium of Chicago in 1982; the Ewing Halsell Foundation gave $18,500 to the San Antonio Zoo; and the Clark Foundation contributed $75,000 to the New York Zoological Society in 1982.

SUPPORT FOR COLLECTIONS MANAGEMENT

Private support for collections management in museums has been limited. Several factors explain this. Because the registration of objects is routinely done, funds for it are allocated in museum budgets. It is the most general of general operations. Conservation, on the other hand, is often not a part of the annual operating budget, and many conservation projects involve bringing in outside expertise. This gives conservation treatment the character of project support for which funds must be sought. Relatively few museums have undertaken major collections management projects for which comparable outside funding was sought. The level of outside funding for collections management reflects the fact that collections management activities often are regarded by museums as line items in their institutional operating budgets.

The majority of private funding in this area is given for the development of computerized systems for museum records. For example, the Art Museum Association received funding from the Mellon and Ford Foundations, Chevron, Xerox and the Robert Sterling Clark Foundation in support of the development and introduction of ARTIS, a computer software progam for art museums.

Research for MILAM, the software program for collections management at the Dallas Museum of Art was supported by the McDermott Foundation while the implementation of the program received funding from the Texaco Philanthropic Foundation.

INFORMATION FROM THE FOUNDATION CENTER: (1975-1982)
LIST OF CONSERVATION GRANTS
BY MUSEUM TYPE

ANTHROPOLOGY/ETHNOGRAPHIC MUSEUMS

Dayton Hudson Fdn Minneapolis	$5,000 in 1981 to Thomas Gilcrease Museum Tulsa for conservation laboratory

ART MUSEUMS - COLLECTIONS MAINTENANCE

Ahmanson Fdn Los Angeles	$10,000 in 1982 to Los Angeles County Museum of Art
Clark Fdn New York	$15,000 in 1982 to Farmer's Museum for renovation of storage facilities
S.H. Cowell Fdn San Francisco	$25,000 in 1977 to MH de Young Museum
Kresge Fdn Troy, Mi	$674,000 in 1977 to National Gallery of Art for conservation facilities renovation
	$200,000 in 1981 to National Gallery of Art for analytical laboratory in west wing
	$150,000 in 1981 to Guggenheim for climate control and security systems
Orleton Trust Fdn San Mateo, Ca	$5,000 in 1978 to MH de Young Memorial
David & Lucille Packard Fdn Los Altos, Ca	$5,000 in 1982 to Bishop Museum

ART MUSEUMS - CONSERVATION TRAINING PROGRAMS

Hartford Fdn for Public Giving Hartford, Ct	$150,000 in 1977 to Wadsworth Atheneum
Andrew W. Mellon Fdn New York	$216,000 in 1978 to Metropolitan Museum of Art, New York City
	$157,000 in 1979 to Walters Art Gallery, Baltimore

$82,500 in 1979 to Philadelphia Museum of Art

$146,500 in 1979 to Boston Museum of Fine Arts

$101,692 in 1979 to Los Angeles County Museum of Art

$97,500 in 1979 to Kimbell Art Museum

$120,938 in 1979 to Detroit Institute of Arts

$105,675 in 1979 to Cleveland Museum of Art

$12,000 in 1981 to Drawing Center, NYC, for training in paper conservation

$96,000 in 1979 to Art Institute, Chicago

$101,000 in 1980 to Metropolitan Museum of Art, New York City

$20,550 in 1980 to San Francisco Art Museum for training in film production

$400,000 in 1981 to Philadelphia Museum of Art

$750,000 in 1981 to Metropolitan Museum of Art, New York City

$400,000 in 1981 to Los Angeles County Museum of Art

$200,000 in 1981 to Kimbell Art Museum

$500,000 in 1981 to Detroit Institute of Arts

$450,000 in 1981 to Art Institute, Chicago

$200,000 in 1981 to Walters Art Gallery

$750,000 in 1981 to Philadelphia Museum of Art

	$750,000 in 1981 to Boston Museum of Fine Arts
	$500,000 in 1981 to Cleveland Museum of Arts
Samuel H. Kress Fdn New York	$28,000 in 1981 to American Museum of National History

ART MUSEUMS-CONSERVATION TREATMENT

Dayton Hudson Fdn Minneapolis	$5,000 in 1980 to Denver Art Museum
Dillon Fund New York	$25,000 in 1982 to Metropolitan Museum of Art, New York City
McInerny Foundation Honolulu	$30,000 in 1982 to Honolulu Academy of Arts
Santa Barbara Fdn Santa Barbara	$13,374 in 1982 to Santa Barbara Museum
Robert Sterling Clark Fdn New York	$15,509 in 1977 to Parrish Art Museum
	$7,500 in 1981 to Penobscot Marine Museum

ART MUSEUMS - GENERAL

Sherman Fairchild Fdn Greenwich, Ct	$375,000 in 1982 to Metropolitan Museum of Art, New York City
McGregor Fund Detroit, Mi	$50,000 in 1976 to Detroit Institute of Arts
Andrew W. Mellon Fdn New York	$1,500,000 in 1980 to Museum of Modern Art conservation lab endowment
	$175,000 in 1981 to Winterthur Museum
	$25,000 in 1979 to Winterthur Museum for administration and research costs in conservation

	$100,000 in 1981 to Wadsworth, Atheneum
	$464,000 in 1981 to National Gallery of Art (3-year grant)
	$200,000 in 1981 to Colonial Williamsburg
	$175,000 in 1981 to Brooklyn Institute
Edwards John Noble Fdn New York	$5,000 in 1975 to Museum of Modern Art 5-year educational activities)

ART MUSEUMS - MISCELLANEOUS

JDR 3rd Fund New York	$5,000 in 1975 to Metropolitan Museum of Art, New York City, for visiting conservator
Robert A. Welch Fdn Houston, Texas	$50,000 in 1975, $50,000 in 1977 $50,000 in 1979, to Museum of Fine Arts, Houston, for chemical conservation study

FOREIGN SUPPORT

Ford Fdn New York	$20,500 in 1976 to Siam Society, Bangkok, for art conservation
	$16,524 in 1981 to gov. of Thailand for training in conservation of religious murals
	$25,809 in 1982 to National Museum of Pakistan for conservation laboratory equipment
	$8,400 in 1982 to ICSPRC, Rome for training of Indian scholars in conservation

GENERAL

Andrew W. Mellon Fdn New York	$650,000 in 1976 to Carnegie Mellon Fdn (3-year grant for research center) $675,000 in 1979 to Carnegie Mellon Fdn for research on materials of artists $90,000 in 1980 to National Conservation Advisory Council, Washington, D.C.

HISTORIC PRESERVATION

Andrew W. Mellon Fnd	$25,000 in 1980 to National Academy of Sciences Commissions on Sociotech Systems for publication of report on conservation of Historic Stone Buildings
Richard King Mellon Fdn Pittsburgh	$150,000 in 1982 to National Trust for Historic Preservation, for Rural Conservation Project

HISTORIC SITE

Mary Duke Biddle New York	$7,500 in 1982 to North Carolina State Executive Mansion to repair antique furniture
Permanent Charity of Boston Boston	$20,000 in 1981 to U.S.S. Constitution Fdn., for artifact conservation

HISTORICAL SOCIETY

F.R. Bigelow Fdn St. Paul	$10,000 in 1982 to Minnesota Historical Society for photograph conservation program
Hartford Fdn for Public Hartford, Ct	$35,000 in 1982 to Connecticut Historical Society for storage units
J.M. Kaplan Fdn New York	$5,000 in 1982 to Long Island Historical Society for restoration of paintings

Pew Memorial Trust Philadelphia	$52,500 in 1982 to American Antiquarian Society toward conservation staff needs
St. Paul Fdn St. Paul	$10,000 in 1981 to Minnesota Historical Society for conservation laboratory; $22,335 in 1982 as 2nd year support
Z. Smith Reynolds Winston-Salem, NC	$7,500 in 1975 to University of North Carolina Dialectic for conservation of paintings

NATURAL HISTORY MUSEUMS

Kresge Fdn Troy, MI	$75,000 in 1982 to Cleveland Museum of Natural History for storage units

PLANETARIUM

Field Foundation of Illinois Chicago	$35,000 in 1982 to Adler Planetarium, in Chicago, for endowment/establishment cost

REGIONAL CONSERVATION CENTERS

Cleveland Foundation Cleveland	$51,230 to Intermuseum Conservation Association, Oberlin, for equipmemnt
Humboldt Area Fdn Eureka, Ca	$20,000 in 1979 to Balboa Art Conservation Center, San Diego, to remodel facility
McInerny Fdn Honolulu	$5,000 in 1982 to Bishop Museum for Pacific Regional Conservation Center
Andrew W. Mellon New York	$239,000 in 1977 to Intermuseum Conservation Association, Oberlin (3-year grant for programs)
	$210,000 in 1978 to Rocky Mountain Conservation Center for programs
	$125,000 in 1978 to Clark Art Institute for endowment

	$100,000 in 1979 to Conservation Center for Art & Historical Artifacts (3-year grant)
	$10,000 in 1980 to Upper Midwest Conservation Center, for director's conference
	$118,200 in 1980 to Northeast Document Conservation Center for programs
	$270,000 in 1980 to Intermuseum Conservation Center, Oberlin (3-year progran grant)
	$285,000 in 1980 to Fogg Conservation Center (3-year program grant)
William Penn Fdn Philadelphia	$157,160 in 1980 to Conservation Center for Art & Historical Artifacts
Pew Memorial Trust	$30,000 in 1980 to Conservation Center for Art & Historical Artifacts
G.N. Wilcox Trust Honolulu	$5,000 in 1982 to Bishop Museum for Pacific Regional Conservation Center

UNIVERSITY CONSERVATION PROGRAMS

Andrew W. Mellon Fdn New York	$300,000 in 1977 to Winterthur/University of Delaware (3-year grant)
	$300,000 in 1977 to Institute of Fine Arts, New York University (3-year grant)
	$237,000 in 1977 to Cooperstown, SUNY, (3-year grant)
	$750,000 in 1979 for 3 year endowment
	$240,000 in 1980 3-year for general support
	$300,000 in 1980 (3-year grant)

	$250,000 in 1980 to Cooperstown (3-year grant for graduate student stipend)
Samuel H. Kress Fdn New York	$80,000 in 1975 to University of California, San Diego, (3-year grant for construction training program
	$100,000 in 1975, see above
	$120,000 in 1976 to University of California,San Diego, for conservation training program
	$150,000 in 1977, see above
	$100,000 in 1981 for a 2-year endowment

UNIVERSITY ART MUSEUMS - CONSERVATION TREATMENT

Ahmanson Fdn Los Angeles	$18,000 in 1978 to University of Southern California
Samuel H. Kress Fdn New York	$60,000 in 1980 to Hebrew Union College, Skirball Museum
Meadows Foundation Dallas, Texas	$5,600 in 1981 to Meadows Museum, Southern Methodist University
William Penn Fdn Philadelphia	$5,000 in 1976 to Swarthmore College

ZOO

Mary Reynols Babcok Fdn Winston, Salem, N.C.	$111,362 in 1982 to North Carolina Nature Conservancy for endangered areas
Clark Fdn New York	$7,500 in 1982 to Bronz Zoo for animal research & conservation center
Ewing Halsell Fdn San Antonio	$18,528 in 1982 to San Antonio Zoo for conservation of armadillo

APPENDIX

LIST OF FOUNDATIONS THAT AWARDED CONSERVATION GRANTS FROM 1975 THROUGH 1982

THE FOUNDATION CENTER
WASHINGTON, D.C.

Ahmanson Foundation
Los Angeles, California

Mary Reynolds Babcock Foundation
Winston Salem, North Carolina

Mary Duke Biddle Foundation
New York, New York

F.R. Bigelow
St. Paul, Minnesota

Robert Sterling Clark Foundation
New York, New York

Clark Foundation
New York, New York

Cleveland Foundation
Cleveland, Ohio

S.H. Cowell Foundation
San Francisco, California

Dayton Hudson Foundation
Minneapolis, Minnesota

Dillon Fund
New York, New York

Sherman Fairchild Foundation
Greenwich, Connecticut

Field Foundation of Illinois
Chicago, Illinois

Ford Foundation
New York, New York

Ewing Halsell Foundation
San Antonio, Texas

Hartford Foundation for Public Giving
West Hartford, Connecticut

John D. Rockefeller
New York, New York

J.M. Kaplan Foundation
New York, New York

Kresge Foundation
Troy, Minnesota

Samuel H. Kress Foundation
New York, New York

MeGregor Fund
Detroit, Michigan

McInerny Foundation
Honolulu, Hawaii

Meadows Foundation
Dallas, Texas

Andrew W. Mellon Foundation
New York, New York

Richard King Mellon Foundation
Pittsburgh, Pennsylvania

Edward John Noble Foundation
New York, New York

Orleton Trust Foundation
San Mateo, California

David and Lucille Packard Foundation
Los Altos, California

William Penn Foundation
Philadelphia, Pennsylvania

Permanent Charity Fund of Boston
Boston, Massachusetts

Pew Memorial Trust
Philadelphia. Pennsylvania

Z. Smith Reynolds
Winston Salem, North Carolina

Santa Barbara Foundation
Santa Barbara, California

St. Paul Foundation
St. Paul, Minnesota

Robert A. Welch Foundation
Houston, Texas

G.N. Wilcox Trust
Honolulu, Hawaii

The following foundations are on record at The Foundation Center as supporting conservation, though no information was found regarding their specific activities.

DuPont Company
Coca-Cola Company
First Mutual Savings and Loan
Grundy Foundation
Kevorkian Foundation
Robert Lehman Foundation
McArthur Foundation
McDonald Foundation
Giles W. and Elise G. Mead Foundation
Polaroid
Schwayder Foundation
3M Foundation
Tinker Foundation
United Technologies
Xerox Corporation

PROJECT 5: FEDERAL FUNDING OF CONSERVATION AND COLLECTIONS MANAGEMENT PROJECTS IN MUSEUMS

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FEDERAL FUNDING OF CONSERVATION AND COLLECTIONS MANAGEMENT PROJECTS IN MUSEUMS

INTRODUCTION

The federal government, through a variety of its agencies, provides financial support for the care of museums collections. The AAM has collected information on programs sponsored through fiscal year '84 by the the following six federal agencies: the Institute of Museum Services, the National Endowment for the Arts, the National Endowment for the Humanities, the National Museum Act, the National Science Foundation, and (to a limited extent) the Department of Education. Each of these agencies funds very specific types of collections and projects, although there is potential for overlap. The National Endowment for the Humanities funds collections of value to the humanities. In general, their grants are confined to art and history museums and to museums with anthropology collections. The National Endowment for the Arts primarily supports art museums or other organizations with collections of artistic or aesthetic significance.

The National Science Foundation supports the conservation of systematic collections in biology and anthropology. The Department of Education's Strengthening Research and Library Resources program provides funding for the preservation of significant library collections for which a number of museums are eligible.

The Institute of Museum Services and the National Museum Act provide support for the broadest museum population and range of projects. IMS funds conservation in all museum disciplines. NMA provides support for research, training, and technical assistance with broad impact on the museum community. IMS funding is restricted to projects initiated by museums; NEA, NEH, and NMA support the work of cooperative conservation centers and professional museum associations.

Within the guidelines of each program there are further distinctions. For example, NEH provides only emergency treatment for objects, and treatment in connection with special exhibitions. IMS and NSF can provide support for the purchase of proper storage equipment.

Of the federal programs supporting collections, the oldest is NMA, the youngest is the conservation program that IMS initiated in fiscal year '84. The level of funding and range of awards vary widely from agency to agency, from a few thousand dollars for a collection survey to hundreds of thousands of dollars for collections maintenance. There are recent increases in the funding available and renewed policy emphasis on conservation at several of the federal agencies.

The following summaries describe each of the programs in greater detail and provide a brief history of the support that each program has given to collections needs.

INSTITUTE OF MUSEUM SERVICES

The Institute of Museums Services, an independent agency, was established in 1976 to assist museums in their educational role; to assist in modernizing their methods and facilities so that they may be better able to conserve our cultural, historic, and scientific heritage; and to ease the burden borne by museums as a result of their increasing uses by the public. The policies and programs of the IMS are determined by the National Museum Services Board, a presidentially appointed body of 15 voting members.

General Operating Support

Most of the IMS funds are awarded through General Operating Support (GOS), the primary program of the agency and the program created to fulfill IMS's original Congressional mandate. GOS funds are competitively awarded and are based on a comprehensive description of the museum's programs and services, including a discussion of its conservation activities. Grant funds are not designated for a specific project but may, with very few restrictions, be expended in any manner the museum finds most appropriate to strengthen its programs and services.

Grantees are eligible to receive an award which represents 10% of their prior year, non-Federal operating income, to a maximum amount established by the NMSB. Grantees with incomes under $50,000 are eligible to receive $5,000. The maximum awards by fiscal year have been:

FY 1978	$25,000
FY 1979	$25,000
FY 1980	$35,000
FY 1981	$33,460
FY 1982	$35,000
FY 1983	$50,000
FY 1984	$50,000
FY 1985	$75,000

In 1984, IMS began to collect specific information on where museums have expended their GOS awards by asking their 1983 recipients to report on their actual or approximate expenditures by categories. As this information is not used to evaluate the performance of the grant, and as responses may be approximate, the total expenditures reported must be considered unreliable and may represent, at least in part, a report of expenses which grantees feel the agency would prefer to see. Nevertheless, for Fiscal Year 1983, grantees report expending a total of $514,847 in the conservation expense category of $9,210,026 awarded for General Operating Support.

Special Project Support

Special Project Support grants were awarded in every year from 1978 through 1984 with the exception of 1982 when the program was not offered. The intent of the program was to support exemplary, experimental or innovative projects carried out by one museum or a consortium of museums to increase or improve the services of the museum community as a whole. It was also intended that the Special Project Support program would consider activities not traditionally supported by any other Federal programs. Special Project grants were awarded competitively on the basis of a narrative propoasl and in reponse to specific criteria, including the plan of operation, the quality of key project personnel, the budget and cost effectiveness, the adequacy of resources for the project, its general benefit, its unique benefit, its model or exemplary benefit, its financial benefit, other support for the project, and the dissemination plan. Grants were made on a one-to-one matching basis. The maximum awards for a Special Project by fiscal year have been:

FY 1978	$25,000
FY 1979	$25,000
FY 1980	$35,000
FY 1981	$33,460
FY 1982	No Awards
FY 1983	$50,000
FY 1984	$50,000

Among the types of activities for which a museum could apply, emphasis was placed on professional staff training; projects to obtain expert assistance; the conservation of objects, plants or animals; museum education programs for special audiences; the development of cooperative educational programs with non-museum organizations; and cooperative travelling exhibitions.

Grants were awarded on a competitive basis and have included a variety of collections care projects. One project was funded to implement and refine a computerized collections catalogue for a state history museum and to test its adaptability for smaller museums. Another award was granted to a university museum to undertake the conservation and storage of several hundred archeological textiles in its collections. One of the objectives of this project was to design a model for mass-production conservation techniques, while maintaining a high quality of single object treatment.

Conservation Project Support

Conservation project support was initiated in 1984 to provide grants to museums of up to $25,000 for conservation projects. Conservation for this program includes, but is not limited to, the following functions as applied to art, history, natural history, science and technology, and living collections:

(1) Technical examination of materials and surveys of environmental and collection conditions;

(2) Provision, insofar as practicable, of optimum environmental conditions for housing, exhibition, monitoring, reformating, nurturing and transportation of objects;

(3) Physical treatment of objects, specimens and organisms, for the purpose of stabilizing, conserving and preserving their condition; removal of inauthentic additions or accretions, and physical compensation for losses; species survival activities; and

(4) Research and training in conservation.

Conservation grants require a one-to-one match of IMS funds from non-federal sources.

Conservation grants are awarded competitively on the basis of an application narrative which responds to programmatic and technical criteria. The programmatic criteria include the importance of the object/s to be conserved and their significance to their museum's collections and audiences; the relationship of the project to the museum's on-going conservation activities; the anticipated results or benefits of the project; and the financial and other resources devoted to the project. The technical criteria include the design of the project; the appropriateness of the conservation methods proposed; the adequacy and reasonableness of the budget; and the qualifications of the key personnel.

IMS awarded 203 Conservation Project Support grants in FY 1984 totaling $2,890,534. Recipients represented all disciplines of museum as follows:

Aquariums	1
Arboretums	12
Art	54
Childrens/Junior	3
General	21
Historic House	14
History	54
Natural Hist/Anthro	14
Nature Center	1
Science/Technology	2
Zoos	12
Other	15

The types of projects funded included surveys, treatment, training, provision of optimum environmental conditions, and research in conservation. These projects included the full range of object types represented in the collections of the museum disciplines listed above. Projects funded are varied, ranging from the conservation of a single painting or the installation of climate control systems, to the species survival activities for plants and animals. A brief description of all projects funded in this program is available from the IMS.

NATIONAL ENDOWMENT FOR THE ARTS

The National Endowment for the Arts was created in 1965 under the legislation of the National Foundation on Arts and Humanities Act. Funding for the National Endowment for the Arts was appropriated in the following year. During the first three years of the endowment's existence, funding for museums was provided through the Visual Arts Program. In 1971 the National Endowment for the Arts established the Museum Program, which included a special funding category devoted to conservation. It was created in order to provide assistance in each of the following areas: conservation training; general operating support and start-up funds for regional conservation centers; conservation planning; and the treatment of collections. With the exception of funding to regional conservation centers, the guidelines established by the National Endowment for the Arts Museum Program have remained much the same since the program's initiation. Over the year, there has been an increase in support for conservation performed by a museum in its own facility rather than at regional centers or through the use of outside consultants. The program, in a variety of ways, has encouraged museums to view conservation and collections maintenance as integral aspects of museums operations.

The National Endowment for the Arts supports only specific projects and not individuals, neither does it provide assistance for the preservation of buildings or for construction costs. All the awards are matching grants; the funds for the match have come from a variety of sources, including private foundations and local support. Federal funding for the National Endowment for the Arts Museum Program has steadily increased since its founding. During the twelve years analyzed (1971-82), a total of $11,624,185 was spent on approximately 750 different projects.

Funds for conservation training totaled $5,305,730 for the twelve-year period analyzed--more than any other category in the conservation program. Money for conservation training was divided almost equally between university training programs that received support for special improvements, graduate stipends and fellowships (40 percent), and museum apprenticeships (38 percent). In both instances, grants were awarded to institutions and not to individual students. While university and museum training programs received an equal number of awards, the National Endowment for the Arts granted the bulk of these grant funds to degree-granting programs. Less than 5 percent of the overall program funding was awarded for conferences, equipment, publications, or workshops in conservation awareness among museum professionals. Overall, conservation training consistently has received an average slightly less than 50 percent of the Museum Program's funding for conservation in any given year, evidence of National Endowment for the Art's commitment to and strong support of professional training.

Regional conservation centers received a total of $1,921,034 during the period examined. At the time of the greatest grant activity for this part of the program, an average of eight centers received funds. Regional centers were awarded money for the following areas: general support 50 percent), endowment and start-up costs (22 percent), research and development (15 percent), and equipment (9 percent). For the past several years, funding to regional centers has dropped significantly, as more and more centers became self-sufficient. While they received 16 percent of the overall funds in the twelve-year period analyzed, there has been a steady decrease in the support that the centers enjoy. Beginning in 1978, regional centers received 32 percent of National Endowment for the Arts conservation funds, an allocation that dropped the next year by half and continued to decrease during the next two years., In 1982, the centers received less than 1 percent of National Endowment for the Arts' funds. In the current National Endowment for the Arts guidelines, regional centers are assisted with a maximum of $25,000 for equipment purchases only, although they receive National Endowment for the Arts support indirectly for treatments and surveys undertaken for museums funded by National Endowment for the Arts grants.

A total of 64 planning studies initiated by museums to survey their collections for conservation needs were funded by the National Endowment for the Arts. Approximately $256,141 was spent in this area. Grants, limited to $10,000, averaged approximately $4,500. Six of the 64 studies were dual-purpose grants; money was requested to conduct a conservation survey and then within the same grant period a portion of the grant funds was used to conserve works of art. Five of the survey grants were conducted by regional centers in conjunction with museums or state arts agencies, in an effort to determine the conservation needs of museums within a particular state or region. The remaining 53 surveys were conducted by individual museums, ranging from university museums to large municipal institutions. Working with the uneven information provided by institutions that received grants, paintings and graphic collections were the focus of most conservation planning grants, followed by ethnographic and sculpture collections. Only two photographic collections, one textile collection, and one decorative arts collection were the subject of conservation surveys.

In the majority of cases, the surveys produced by these grants have not yet led to a second grant from the National Endowment for the Arts for conservation treatment. Only 18 of the nearly 500 grants for conservation treatment were awarded to institutions that had once participated in a National Endowment for the Arts-funded conservation survey. This number is surprisingly low and may have several explanations. Because surveys take a long time to complete, museums may not yet have applied for treatment funds, or if they have applied, they may not have been successful. It is also possible that treatment may not have been a priority recommendation in some cases, or that museums have not acted so quickly on the survey findings.

By far the greatest number of grants given by the National Endowment for the Arts was awarded for the treatment of collections. Approximately 488 projects received an estimated $4,074,919. The amount of the grant award (up to $25,000) varied according to the number of works treated. While some institutions requested money to treat a single painting of particular significance to the collection, or a work that was to be part of an upcoming exhibition, another institution may have requested money to stabilize an entire collection.

The majority of funding in the area supported emergency treatments. All the grantees in this category indicated the type of object to be conserved. They represented a wide range of objects, from porcelains to paintings. The most frequently conserved objects were paintings, followed by graphics, sculpture, decorative arts, photographs, textiles, and finally, ethnographic collections. A miscellaneous group included rare books, manuscripts, transportation vehicles, and other items. Because of National Endowment for the Arts funding restrictions prior to 1979, money was awarded in this area only for projects that could not be satisfied by the museum's own conservation facility. Consequently, a large percentage of smaller museums and historic sites received funding, due to the fact that they were without adequate conservation facilities. During 1979-85, treatment projects have been awarded for work done anywhere--in a museum's lab, regional center, or even private conservator.

Some general comments can be made regarding the conservation awards made by the National Endowment for the Arts. As mentioned, conservation training has been a consistently high priority of the National Endowment for the Arts program, receiving close to 50 percent of the total funds. Treatment of collections follows, with almost 30 percent, although in recent years funds for treatment have been increasing substantially, to 56 percent of the total in 1982. Prior to the 1985 guidelines, planning, which received an average of 2 percent of the funds available, was considered a subsection of the treatment of collections; it is now a separate category. Having played a vital role in the development of regional conservation centers, the National Endowment for the Arts now restricts direct support to the centers to equipment purchases.

NATIONAL ENDOWMENT FOR THE HUMANITIES

The National Endowment for the Humanities was established in 1965 under legislation by Congress that called for a National Foundation on Arts and Humanities. Until fiscal 1984, the National Endowment for the Humanities had no category specifically for conservation and management of museum collections, although support for these activities was available in several of the endowment's program areas.

The research resources program in the Division of Research Programs provided the majority of NEH funding for conservation and management of museum collections. Until 1984 the Museums and Historical Organizations Program in the Division of General Programs gave a very limited amount of funds for these purposes.

In fiscal 1984, however, the endowment established a new category of grants within the Museums and Historical Organizations Program, called Collections Study and Management. This pilot category was established to enable institutions and scholars to have greater access to collections for the purpose of developing interpretive exhibitions and public programs through improved documentation procedures and conservation treatment.

The collections study and management program offers five types of grants: documentation; planning for computerized documentation; conservation survey and analysis; and conservation treatment. Documentation grants of up to $25,000 give support to institutions for a two-part project to catalog a collection and develop long-range plans for its use in interpretive programs. Grants of up to $5,000 are provided to enable experienced professionals with a broad knowledge of museums and computerized collections management techniques to provide on-site consultation on planning for computerized documentation, or to allow staff to travel to other institutions to learn from successful computerized systems.

Conservation survey and analysis grants provide up to $10,000 to support the work of the museum's conservator in developing condition and treatment reports for objects in a collection and deciding upon the priorities for treatment. Conservation treatment funds are available for two kinds of projects. Conservation treatment funds of up to $40,000 are available for conservation of objects in permanent collections that are in critical need of treatment and are highly significant to enhancing the public's understanding of the humanities. Conservation treatment funds are also available to support treatment of objects to be included in exhibitions for which implementation funds are simultaneously being sought from NEH. The amount requested for conservation may not exceed the amount requested for implementation of the exhibition.

As of this writing, not all of the grants for fiscal 1984 have been awarded; therefore, it is not possible to know the total amount of funding that went to the new conservation initiative.

The Museums and Historical Organizations program also provides conservation funding in the collections sharing program. Under this program, grants are awarded for the preparation of stored or seldom-exhibited objects for exhibition in another institution. The collection must be used "to strengthen the humanities-based public programs of the borrowing institutions." The grant covers such costs as cataloging and conservation of objects, research, interpretive labels, and shipping.

The number of applications funded under this program is extremely small; only three grants have been given, all to the Peabody Museum at Harvard. The Peabody received $150,000 in 1980 to support implementation of a program through which the museum shares its ethnographic and archeological collections with seven other museums of various disciplines. The museum subsequently received $140,000 in 1981 and $133,691 in 1983 to continue support for the sharing of the collections. The endowment's explanation for the very small number of grants funded in this category is that borrowing institutions have very rarely made strong cases that the collections they wish to share with lending institutions are significant to the understanding of the humanities in their own institutions.

Until fiscal 1984, the largest source of conservation and collections management funding at the Humanities Endowment was the Research Resources Program in the Division of Research Programs. This program is designed to provide funds to "preserve and make available for research varied types of documentary resources currently not readily accessible. The program helps to increase access to research material through processing, cataloging, and bibliographic projects and to preserve materials of significance to humanities scholars."

There are two categories within the program that fund conservation and management of museum collections: projects for organization and improvement, and projects for preservation and conservation. In the first category, projects that attempt to make totally inaccessible collections available for research in the humanities are eligible for support. In general, these grants attempt to achieve a minimum level of access that is adequate to the needs of scholars. In the last year, however, the program funded an extensive project by the Research Libraries Group to make it possible for them to enter cataloged information into a national data base and this suggests that the program's directions may be changing.

The second category of conservation/collections support in the Research Resources program is preservation and conservation projects. This includes support for microfilming deteriorating collections and also a limited number of model conservation and preservation projects. Some types of projects funded are developing national priorities for conservation, local, or regional cooperative conservation programs, training in preventive methods, and pilot projects to help develop new methods of conservation.

Funding for museums in the organization-and-improvement category fluctuated from a high of 31 percent in 1977 to a low of 10 percent in 1981. During the other years it stayed relatively the same, between 15 and 18 percent. It does not appear that a higher allocation of funds for the program resulted in more money available for or awarded to museums.

The conservation and preservation program, which only began granting funds in 1981, has had a much smaller budget. In 1981, nine grants were funded at a level of $493,493, for an average grant of $54,833. In 1982 eight grants were funded at a level of $432,759, for an average grant of $54,095. And in 1983, six grants were funded at $577,126, for an average grant of $96,187. Museums received four grants in the three-year period analyzed, for a total of $321,994.

In all probability, funding for the conservation and management of collections in museums and historical organizations will undergo significant changes at the Humanities Endowment in the next few years as the program responds to needs from the field and becomes better known. The research resources program, because of its impact on scholarly research in the humanities, also has the potential to become a source of conservation and collections management funding for collections with major research potential for the humanities.

NATIONAL MUSEUM ACT

The National Museum Act of 1966 established a technical assistance program, administered by the Smithsonian Institution, to issue grants for projects that would enhance the quality of museum operations nationally. These grants support training opportunities for museum professionals, research about critical museum-related problems, and projects that enable organizations to provide technical services to museums. Historically the grant program has attempted to increase professionalism in the museum community and an awareness of the importance of conservation to the care of our cultural and national heritage. Projects submitted to the NMA must give evidence of the intention to elevate museum practices rather than serve the particular needs of individual institutions.

Grantees include museums of all types, academic institutions with museum-related programs, and professional museum organizations and associations. In 1985, 54% of the awards made went to museums, 30% to organizations and associations, and 16% to universities. Among the museums that received funds, 35% were art museums, 21% history museums and historical organizations, 18% zoos, 9% botanical gardens, 6% natural history or general museums, and 6% aquariums and planetariums.

Applications submitted to the Act are evaluated each year by an Advisory Council, which also identifies priorities for funding and advises on policy matters. Nine members, who are museum and conservation professionals from various disciplines and geographical regions of the United States, are appointed by the Secretary of the Smithsonian Institution, and two are ex-officio (the current President of the American Association of Museums and the Assistant Secretary for Museum Programs at the Smithsonian).

From 1972, when funds were first made available by Congress, to 1985, the National Museum Act reviewed 2,345 applications and made 792 awards totaling $10 million. Fifty percent of the awards involved conservation. In the last four years, the percentage of grants related to conservation has ranged from 64% (in 1985) to 77% (in 1983). Priority was given in the Guidelines to conservation projects in all grant categories. Those with the highest percentage of conservation-related awards were Stipends to Individuals for Conservation Studies (100%) and Special Studies and Research (91%).

Professional Training. From 1982 to 1985, twenty-six awards were made to academic institutions offering training programs related to professional museum work. Twelve awards to four different institutions supported fellowships or internships in training programs for advanced studies in conservation. One of the programs involved training in architectural conservation, and another training in the conservation of library and archival materials.

Fifty-eight museums were recipients of internship awards to enable beginning professionals who have already received academic training to obtain practical experience in museum practices. Thirty-two grants to institutions with both living and non-living collections involved the conservation of paintings, works of art on paper, books, archaeological or ethnographic objects, and exotic animals. One grant, to a major art museum with a conservation laboratory, supported the training of a future conservation scientist.

Sixty-four individuals sponsored by various museum-related institutions received grants under the Stipends to Individuals for Conservation Studies program to advance their training in conservation. This program, which was established in 1976 in response to a continuing need for professional conservators in the United States, offers various types of assistance. Some awards involve enrollment in a multi-year formal training program or a short-term specialized course. Others involve an internship of several months duration for conservators already employed by a museum or a nine to twelve-month internship for recent graduates of a formal training program. Individuals who received awards gained expertise in many different specialities, such as books, paintings, paper, objects, and textiles.

Thirty-nine workshops, of which twenty related to conservation, were supported in different areas of the country. These training sessions were targeted to museum professionals who could benefit from the most current information about various specialized topics. In conservation, several seminars on microscopy were tailored to practicing conservators. Others, for professionals who have not received advanced training in conservation and who are employed by small museums and historical societies that do not have access to in-house conservation staff, involved conservation awareness with an emphasis on paintings, photographs, paper, or textiles. Several seminars on preserving tigers and elephants in captivity were funded for professionals in zoos.

Research. Under a separate grant category, the National Museum Act has provided support for investigations on technical issues that pertain to museums. Applications submitted to the Act in recent years have largely related to conservation and have been increasingly technical and scientific in nature. From 1982 to 1985, thirty-three grants were made to museums and academic institutions on various specialized topics, of which thirty involved conservation. Areas of concern included the preservation of dauguerrotypes, textiles, leather, and objects made of stone or silver. Other topics were pest control, solvent loss and retention properties, and the computerization of infrared reflectography. With regard to living collections, research was supported on developing better nutrition for monkeys in captivity and understanding the diseases of mammals in aquariums.

Services to the Field. A portion of the National Museums Act's budget is available each year for projects that provide services to a museum constituency or that have value for museum professionals in general. From 1982 to 1985, awards were made to support a series of data sheets on health hazards in museum conservation and an international inventory of species, which provides information on captive wild animals to zoos in fourteen countries. The Act continued to provide funding for the activities of the National Institute of the Conservation of Cultural Property.

In recent years, the ratio of applications funded to applications received has been about one in three. Grants have ranged from $900 to $50,000, and the average award has been about $10,000. Although the Advisory Council has refrained from establishing ceilings for each of the grant categories, awards rarely exceed the following amounts: Graduate/Professional Education and Training, $35,000; Museum Internships, $15,000; Stipends to Individuals for Conservation Studies, $8,000; Special Studies and Research, $20,000; Seminars, $10,000; and Services to the Field, $20,000.

NATIONAL SCIENCE FOUNDATION

The National Science Foundation supports conservation of collections in two different programs, the Anthropology Program and the Biological Research Resources Program. The Anthropology Program is in the Division of Behavioral and Neural Sciences; the Biological Research Resources Program is in the Division of Biotic Systems and Resources. Support is given specifically for collections unified by a central theme, an internal cohesiveness and a potential for research.

Unlike other federal granting agencies, NSF makes a relatively small number of grants each year, but the amount awarded by each is usually much greater than the awards given by other agencies. In addition, many of the projects that receive NSF funding require several years to complete.

Awards for the conservation of biological and anthropological resources have been given to universities (including university museums), institutes of science, independent museums, and botanical research gardens.

Anthropology Program

The National Science Foundation's support for systematic anthropological collections began as a response to the findings of the National Academy of Science and the National Research Council's "Simon Committee," which in 1976 emphasized the need for a grant program to upgrade the quality of archeological and ethnological collections in anthropology museums. The National Science Foundation supported a conference in December 1976 (sponsored by the Council for Museum Anthropology) to develop a grant program to preserve systematic anthropological collections. The findings of the conference were summarized in the report, Systematic Research Collections in Anthropology: An Irreplaceable Natural Resource (1977). On the basis of the findings of this conference, the NSF announced the availability of assistance to systematic collections.

The purpose of grants for systematic anthropological collections is to assist systematic collections in museums and universities that are in critical need of restoration and to remedy past neglect.

Proposals are evaluated by a panel of museum professionals and anthropologists on the basis of three criteria:

(1) the scientific potential of the collection itself;
(2) whether the project will increase the availability of the collection for anthropological research through conservation, improvements in storage, and cataloging; and
(3) the immediacy of need because of past neglect and ongoing deterioration.

Collections made after 1978 are not considered.

Funds may be requested for the preservation of fragile or unstable artifacts; to obtain adequate and accessible storage, housing, or protection; or to increase accessibility through cataloging. Small sums for the renovation of existing space may be requested, but funding for the construction of buildings is not available. Short-term support for conservation personnel or other specialized technical assistance that is not available within the institutions may be requested, but such appointments must be specifically connected with the project. These grants do not provide funds for salaries for permanent staff or special equipment for research projects.

The present (fiscal year 1985) annual budget for these grants tops $600,000.

Grants are made for periods of up to five years; however, most projects last for one to two years. Grants for collections management and conservation awarded in fiscal 1977 through 1983 totaled $3,123,571. The average spent was approximately $520,595, with grants ranging in size from $1,289 to $452,113 but averaging $43,383. Support totaling $1,768,280, or 57 percent of the program's funds, was awarded to systematic collections for the conservation of artifacts ranging from textiles and baskets to skeletons. Collections management projects received $1,313,437, or 42 percent of the total. These projects ranged from the modernization of photographic archives to the storage of an osteological collection. One percent, or $41,851 of the funds, is awarded to miscellaneous projects ranging from the publication of exhibition catalogs to the planning of national conferences.

Awards were made to an average of ten institutions each year, evenly distributed to all geographic regions. Natural history and ethnographic/archeological museums received 30 grants (41 percent). These awards were made to large institutions such as the Field Museum, the Bishop Museum, and the Los Angeles County Museum of Natural History. University museums received 23 grants (32 percent), universities 11 (15 percent), and other institutions 9 (12 percent). Among the latter were the Council of Museum Anthropology and the School of American Research. Institutions that receive funding from the National Science Foundation tend to be large organizations that consistently make major contributions to the field of science. Many institutions received a number of grants, often as many as three and four awards for various projects.

Over the years, the program's support has been divided evenly between conservation and collections management. In the past two years (FY 82 and FY 83), there has been a greater emphasis on conservation.

Biological Research Resources Program

NSF support for systematic collections of biology amounted to $31,408,300, awarded through the Biological Research Resources Program of the National Science Foundation from FY 72, the beginning of the program, through FY 83. A systematic biological collection is "a collection of preserved plants, animals or fossils maintained in perpetuity for scientific studies of the diversity of organisms, present day and past." To be eligible for NSF funding for collections care, collections must meet the same three criteria required of anthropological and ethnological systematic collections. Funding of conservation, collections management and collections maintenance are awarded for botanical, zoological and paleontological collections.

Botanical Collections

Overall, $10,736,000 was awarded to botanical collections during the twelve-year period analyzed, representing 34 percent of the total NSF funding in the Biological Research Resources Program. The majority of botanical projects ($5,641,200, or 53 percent) were devoted to collections maintenance to provide for proper preservation conditions, operational care, and routine protection from insects and diseases. Projects devoted to conservation accounted for $2,011,100, or 19 percent of the total awarded. Examples of conservation projects are the upgrading of preserved herbarium collections, the conservation of living germ plasm, the maintenance of propagules (seeds that can be preserved and later resuscitated), and preservation of living species as experimental material for the plant sciences. Several of the projects include a collections management component for the service-function aspects of the collection to the national and international systematic biology research communities through loans of specimens or the accommodation of visiting investigators, although funds often were not specifically broken out as such.

Of the grants awarded between FY 72 and FY 83 for botanical collections, independent museums received $6,109,800, or 57 percent. University-affiliated museums received approximately half this sum--$3,183,700, or 30 percent. The remaining $1,442,500, or 13 percent, was awarded to universities.

Zoological and Paleontological Collections

The zoological collections that receive conservation funding are mollusks, worms, marine invertebrates, insects, fish, amphibians and reptiles, birds, and mammals. Zoological collections received a greater portion of NSF funding than botanical collections. A total of $20,672,300 was awarded during the twelve-year period analyzed--66 percent of the Biological Research Resources Program's funding. A major portion of these grants was awarded during the twelve-year period analyzed--66 percent of the Biological Research Resources Program's funding. A major portion of these grants was awarded to collections maintenance projects ($20,154,590, or 97 percent); very little money was actually earmarked for conservation ($517,710, or 3 percent).

A. Mollusk Collections

Funding amounted to $1,240,300, or 56 percent of the total awards for zoological and paleontological from FY 72 through FY 83, with museums receiving the greatest portion of money--$1,004,600, or 81 percent. The remaining 19 percent was awarded to university projects. All awards were for collections management projects.

B. Worm Collections

Only one collections management grant was awarded in this category during the period under consideration. A multi-year grant of $90,600, less than 1 percent of this program's funding for zoology and paleontology, was awarded to the University of California at Davis in FY 83.

C. Marine Invertebrate Collections

The three grants awarded in this category totaled $275,400, or 1 percent of the total. All were applied to support routine operations and the refurbishment of alcohol-preserved collections. Two awards totaling $194,200, or 71 percent, were made to museums (the Bernice P. Bishop Museum in Hawaii and the California Academy of Sciences in San Francisco). The remaining money--$81,200, or 29 percent--was granted to Harvard University.

D. Insect Collections

Grants in this category totaled $4,992,500, or 24 percent of NSF funding for paleontological and zoological collections. Of the twelve grants awarded, two involved the conservation of living materials, and these combined conservation with collections maintenance. Harvard University received $590,900, or 12 percent of the total, and Cornell University received $198,800, or 4 percent. The remaining grants for collection management projects totaled $4,202,800. Six museums were awarded $3,171,100, or 64 percent, and six universities were awarded $1,821,400, or 36 percent.

E. Fish Collections

In this category, $3,424,300, or 17 percent, was awarded. These non-living collections are alcohol-preserved and require yearly conservation attention to retard evaporation. Of the twelve grants, seven were to museums at $2,592,000, or 76 percent, and five were to universities at $823,300, or 24 percent, for collection maintenance and service function subsidies.

F. Amphibian and Reptile Collections

A total of $1,962,500, or 9 percent, was awarded to projects in this area. The majority of these grants provided for improved routine operations and related service activities. Museums received $1,222,000, or 62 percent of the total, universities $740,500, or 38 percent. A grant combining conservation and collections management was awarded in FY 80 to the American Museum of Natural History. Fifteen percent of a $224,600 multi-year grant was spent to refurbish germ-plasm maintenance facilities, as well as parthenogenesis and clonal reproduction activities.

G. Bird Collections

In this area, $1,996,400 was awarded, accounting for 10 percent of the total amount granted through this NSF program for zoological and paleontological collections. Emphasis was placed on collections management; it received the largest amount of money in this category, totaling $1,887,300, or 95 percent. Four museums received $952,700, or 48 percent, and five universities received $1,043,700, or 52 percent. This zoological category is the only one in which universities received more funding than museums.

H. Mammal Collections

A total of $2,328,900, or 11 percent, was awarded to mammal collections of dried skins and skeletons. Again, the largest percentage of funding was awarded to collections management projects ($1,790,400, or 77 percent).

Conservation projects received $538,500, or 23 percent. Museums received $1,287,200, or 55 percent of the funding for maintenance of mammal collections.

I. Fossil Invertebrate Collections

Overall, $696,100, or 3 percent of the total amount for zoological and paleontological collections, was awarded for fossil invertebrate collections. Collection management projects predominate in the fossil categories and include computerization of the classification records of fossils in storage. Museums received $536,000, or 77 percent, and universities received $160,100, or 23 percent.

J. Fossil Vertebrate Collections

In this category, $3,720,300, or 18 percent, was awarded. The majority of grants in the category are used for collections maintenance projects ($3,415,700, or 92 percent). Five museums received $2,528,300, or 68 percent, and 6 universities received $1,192,000, or 32 percent of the NSF funding in this area.

DEPARTMENT OF EDUCATION
STRENGTHENING RESEARCH LIBRARY RESOURCES PROGRAM

The Department of Education's Strengthening Research Library Resources Program provides necessary funding to major research libraries in order to enhance their collections. The terms "maintain, strengthen, and resource sharing" are key in determining to whom the funds are distributed and for which purposes the money will be applied. In general, support has been granted to encourage three major types of activities: acquisitions (collection development - 9%), cataloging and entering into national data bases (bibliographic control - 71%) and preservation (20%). Since the program began in 1978, $40,752,264 has been awarded. Approximately 85 to 100 applications are received per annum; an average of 35 grants is awarded. The majority of both applicants and grantees are institutions of higher education who receive 73 percent of the appropriated money. The remaining funds are divided among independent research libraries (9 percent), public libraries (6 percent), museum libraries (4 percent), state libraries (3 percent), and other institutions (3 percent). The average award for each grant is approximately $168,000; there is no limit on the amount of a grant. Grants are made for one year only.

To receive support from this program the institution must be of significance as a major research library and the holdings must be of interest to scholars outside of the institution itself.

The Strengthening Research Library Resources Program provides for preservation activities of all kinds since the implementing statute authorizes the "maintaining" of library collections. Preservation activities may be simple or elaborate, depending on the nature of the project being undertaken. Archival preservation is achieved one of two ways: either through the conversion of texts to microfilm or by cleaning, rebinding and or storing books in acid-free environments. Preservation has received the next highest dollar amount of the program's appropriation ($8,313,523, or 20%) over the six year period analyzed. During the first three years of the program an average of 6 awards per year were granted in this area, however, during the following fiscal year (FY 81) awards for preservation doubled to 13, and in FY 82 climbed again by another four grants. The money for this area remained relatively stable with an average yearly expenditure of $1,268,494. In total 49 grants were made in preservation at an average of $128,438 per award. Many of the preservation awards are for projects that share activities with either or both collection development and bibliographic control. In general preservation awards cover the conversion of printed material to microfilm or their stablization in acid-free environments. Occasionally this program will award grant money for the specific conservation treatment of an institution's graphic or special collection. For example, in FY 78 money was awarded to the Huntington Library and Art Gallery to conserve several thousand 17th century English pamphlets which also required the institution's conservation staff to participate in a three week workshop on enzyme treatment techniques. In FY 79 the University of Alaska received a two-part award to first conduct a conservation survey of the library's needs and then to convert their holdings to a computer operation.

Note: The program is authorized under the Higher Education Act of 1965, as amended, and is Title II-C of that law. It is usually referred to as the HEA Title II-C, Strengthening Research Library Resources Program.

PROJECT 6: METHODS OF INVENTORY CONTROL AND COLLECTIONS MANAGEMENT

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INTRODUCTION

Without the ability to identify the types, numbers, and provenance of objects in a collection, to keep track of their location within the museum, and to control their movement, a museum cannot care for the collections for which it is responsible. Collections management through inventory control and recordkeeping is an essential function of a museum.

Most museums have long used some system of recordkeeping to control their collections. In recent decades, individual museums, their professional organizations, and funding sources have recognized the growing importance of inventories, catalogs, and other management techniques to the preservation and care of collections and have sought new standards and procedures in these areas. Outside the United States, countries such as Canada, Italy and Sweden have begun major efforts to develop national inventories. The Canadian system, CHIN (Canadian Heritage Inventory Network), is of particular interest to our efforts because Canada's museums share certain traits with those in this country: geographical distribution, number and variety of institutions.

Crucial to CHIN is the high degree of centralization and uniformity made possible by the overwhelming financial support of the Canadian government. Museum efforts in this country have been hindered by the absence of a single, substantial source of support and the lack of a coordinated or centralized mechanism through which information about collections management can be collected and disseminated. The lack of a nationwide inventory system and its effect on the condition and accessibility of collections was discussed by the Commission of Museums for a New Century. The concerns of the Commission are reflected in Recommendation 4 of the report, which states:

> The lack of information about the number, location and condition of objects, artifacts, and specimens in the nation's museums is a detriment to adequate care and maintenance of these collections and to scholarly programs in general. We urge a planning study to determine the feasibility of a national series of inventories of museum collections . . ., organized and conducted by discipline. These inventories will be the basis for sound future collections management as well as for the development of sound collections policies.

The need to share information has become more pressing and more of a possibility now that museums have entered the computer age and have begun automating collection data. In the 1960s, museum curators and registrars realized that computer technology could assist them in organizing inventory and catalog information. The sixties saw the creation of several programs for collections management that were intended to be nationwide. Since commercial software packages to meet the special needs of museums were unavailable, a handful of museums set about creating their own.

Among these early efforts was GRIPHOS, developed in 1967 by a group of 12 New York museums with a diversity of objects in their holdings. These museums formed the Museum Computer Network, an organization that today serves as a clearinghouse for information on museum automation. Another early program was SELGEM, developed by the Information Systems Division of the Smithsonian Institution. It was created to serve the needs of the curatorial departments of the National Museum of Natural History and was then made available to other interested nonprofit institutions. A number of art, natural history, history, and anthropology museums across the country use the system today, although most museums have modified it to meet the needs of individual institutions.

The consensus is that after almost two decades, these two programs have limited usefulness for widespread future use because of rapid advances in technology.

Other software programs have been or are being developed by several sectors of the museum community. The example of ISIS used by zoological museums, and the projects currently under way for art museums are discussed later.

During the past five years, segments of the museum community have been surveyed to ascertain the extent to which computers are used in museums for collections management. Systematic collections of anthropology were surveyed in 1979, science and technology museums in 1981, and art museums in 1982. Karen Markey's recent survey, "Visual Arts Resources and Computers," published in the Annual Review of Information Science and Technology, vol. 19 (1984), is a very thorough history of computer use in museums both here and abroad and includes a comprehensive bibliography on the subject.

The following report gathers information available on the existing methods of inventory control in museums across the country. In addition, it summarized the responses to questions in the museum collection survey concerning collections management procedures in different types of museums.

ART MUSEUMS

While the computerization of the collections in the nation's art museums is at a level below that of natural history museums and zoos, rapid advances are being made in the effort to control collections documentation. Major municipal institutions haved begun to address the need for accurate, easily retrievable catalog data. Lenore Sarasan, president of Willoughby Associates, Ltd., has developed more than 15 computer inventory systems for museums, including DARIS for the Detroit Institute of Art, and MILAM, the collections management system developed for the Dallas Museum of Fine Arts.

Computers are most often used for inventories, and the Smithsonian's "inventory of American Painting Executed before 1914" offers a successful example of this use. Information on more than 150,000 paintings is entered, and the results are available in printed form. Another project of this type is the inventory of 50,000 portraits in American Public and private collections, a project of the National Portrait Gallery.

Computer use, however, is still not widespread in the art museum community. The 1982 survey conducted by the Art Museum Association found that 68 percent of the 362 responding art museums were not using computers; 25 percent had use of a computer at a location other than the museum, but only 7 percent had in-house computer facilities. In 1983, the Print Council conducted a similar survey ond the status of computerization in art museums. It reported that the majority of museums (57 percent) did not use computers for collections management. As with the Art Museum Association study, many of the museums surveyed that are without computers are planning to add them in the near future.

Museums with in-house computer facilities are most likely to use them for administrative operations such as accounting and financial records, or membership and donor information. Only 16 percent of the museums in the AMA survey reported using computers for collections management.

The museum collection survey yielded similar statistics. For inventory and catalog records, 85 percent of the responding art museums use manual files only; 3 percent use computers only. A combination of both are used by 11 percent for inventory records, and by 9 percent for cataloguing.

Many museum professionals have resisted the move to automated collections records not only because of the high cost but also the lack of knwoledge about how to make decisions about computers. However, two major collaborative efforts under way will have a decided impact on art museums. The Art Museum Association has begun ARTIS, a computer software project to help art museums use computer technology to meet both administrative and collection management needs. The collections management portion of the computer package is being designed to maintain inventory records on all types of objects in a museum's permanent collection. The program is intended primarily for day-to-day registration functions but also provides a current catalog of a museum's holdings and includes information such as object description, inventory information, artist information, condition records, exhibition history and shipping records. The Albright Knox Art Gallery in Buffalo, New York, Amon Carter Museum in Fort Worth, Texas, Honolulu Academy of Arts, and Toledo Museum of Art form the initial pilot group for the software, which will eventually be sold or distributed to other museums.

The other project, one of the operating activities of the J. Paul Getty Trust, is an information-sharing network. Termed the Museum Prototype, it is an experimental program involving eight institutions ranging from the largest art museums in the country to smaller university galleries. These museums are collaborating to develop a standard vocabulary for the description of art objects with the ultimate goal of creating a research tool for curators and other scholars that will consist of linked data bases of information about works of art and art history. This project will take many years to complete but its eventual benefit to the art museum community will be substantial.

Sources

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BOTANICAL GARDENS

The Plant Records Data Center was developed as a select inventory for botanical gardens. This computer inventory, hosued at the offices of the American Horticultural Society in Alexandria, Virginia, receives data from approximately 25 institutions nationwide. To date, almost 170,000 taxa have been entered into the system. The center, begun in 1969 with a 10-year endowment from the Longwood Foundation, is presently in serious financial need. Unlike ISIS, the Plant Records Data Center does not have a large subscription. Most botanical gardens use their own internal inventory record system or lack the resources to contribute to a national inventory.

In response to the museum collection questionnaire, four museums indicated that they use PRDC. Three additional botanical gardens use commercially available data base programs. Fifty percent of the respondents use manual files for inventory records, 11 percent use only computers, and 29 percent use both. For catalog records, 46 percent use a manual system, 11 percent use computers only, and 21 percent use both. These statistics indicate that after zoos and natural history museums, botanical gardens use automated systems to a greater extent than other types of museums.

HISTORY INSTITUTIONS

The diversity and large number of objects in history collections, as well as the predominance of small museums, make it difficult to record and manage history collections. Consequently, the attempt at records computerization has not been as widespread in this field as in other types of museums. The Strong Museum in Rochester, New York, is an exception to this generalization. The museum opened its doors in 1982 with a computerized collections management system in place. Its success is based on the fact that as a new museum with sufficient resources and a commitment to planning, comprehensive recordkeeping could be initiated without the burdens of preexisting systems.

Through the use of statewide surveys, several state and historical societies have researched the extent, location and needs of historic resources within their jurisdiction. In 1979, the Minnesota Historical Society conducted a statewide inventory of historic and archeological sites. The state's collections management needs were given priorities and to address them, a state-funded history center was begun, as well as a grant program aimed at small local historical societies.

The most successful statewide inventory project was begun in 1973 by the Association of Indiana Museums. To date it has inventoried 106 state museums and the information has been entered on computer in a consistent format making the data on more than 250,000 objects easily retrievable for use by museums, scholars and other museum professionals.

The Maine Humanities Council began a similar project two years ago with funds from the National Endowment for the Humanities. The inventory was undertaken in conjunction with the exhibition "Maine in the Federal Period." Over 1,200 decorative and fine arts objects in museums and historic sites were catalogued and photographed. The resulting slide collection is used in teaching programs on the history of Maine and to supplement the use of objects in the classroom. Eventually, it is hoped that the inventory data will be put on computer so that access will be widely available to researchers. The Maine State Museum is interested in establishing a clearinghouse for collections management procedures in history museums, although plans have not been implemented yet.

The Care and Feeding of Your Museum Collection: Gettysburg Collection Management Plan, prepared by the Division of Museum Services, Harpers Ferry, addresses preventive and corrective measures and maintenance procedures designed to keep the need for major conservation treatment to a minimum. This plan, while geared toward historic sites, can be easily adapted to other museums.

In response to the museum collection survey, 81 percent of the responding history museums and historic sites indicated that their collections were inventoried, while 70 percent reported the collections were cataloged. Slightly more than 80 percent use manual files only for both types of records; approximately 10 percent use computers only; and approximately 5 percent use both. These museums are in a situation similar to art museums, but far behind zoos and natural history museums.

Sources

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SCIENCE, NATURAL HISTORY, AND ANTHROPOLOGY MUSEUMS

A 1980 survey conducted by the Association for Science and Technology Centers (ASTC) queried its membership of 138 institutions regarding the status of computer usage among science and natural history museums. Sixty-seven respondents (49 percent) indicated that computers were being usede in four main areas: interactive exhibit devices, exhibit control, education and administration. The use of a computer for administration was highest among these, while collections management projects were lowest (7 percent). Eighty-two percent of the science museums responding indicated that they were planning some computer use in the near future. Four years later, the AAM museum collection survey yielded a higher response rate (11 percent) for the use of computers for inventory records by science museums although computer use by this group for cataloging appears to be nonexistent. The figures are understandably low given the educational, rather than collecting, mission of science/technology centers.

The organization and management of systematic collections in natural history and anthropology museums are examined in publications by Richard Ford and Lenore Sarasan. The latter study, undertaken for the Association of Systematics Collections, has summaries of individual projects in management systems.

According to the museum collection survey, 64 percent of natural history collections are inventoried, 58 percent are cataloged. These records take the form of manual files 68 percent of the time for inventories, and 54 percent of the time for catalogs. A combination of manual and computer records is kept by 29 percent of the natural history museums for inventory purposes, while 36 percent use both types of systems for catalog records. Two natural history museums indicated the use of SELGEM; one uses GRIPHOS; six others use different data management software programs, usually customized for the institution.

Several natural history, science, and anthropology museums have been very active in the area of collections management. The following are projects currently under way:

SELGEM, which was developed for the National Museum of Natural History, is being updated along with other computer bases utilized by the Smithsonian Institution's 10 museums. The Collections Information System (CIS), presently in the conceptual stages, is being designed to meet the following records needs: documentation, live-specimen management (for the zoo and botanical collections), collections management (recording the movement of objects), conservation activities, publication management, and information retrieval.

The Arizona State Museum is an example of an institution using a locally produced automated system (REGIS), that interfaces with SELGEM. The Museum of the American Indian and the Field Museum also have their own systems and have completed inventories of their collections. The Academy of Natural Sciences in Philadelphia has information in interactive videodisc format on approximately 1,000 specimens.

In 1980, the Department of Invertebrates of the American Museum of Natural History completed a five-year project supported by the National Science Foundation, to curate its collection and begin a general inventory.

A statewide inventory was recently established by the Environmental Protection Agency and the Nature Conservancy in Connecticut. The Natural Diversity Data Base opened to the public in 1984, is designed to aid corporations and developers in avoiding damage to natural habitats by construction or other projects. It is not known whether similar data base centers will be opened in other states.

The Chicago Museum of Science and Industry has established a resource center to provide assistance to nonprofit organizations on information systems and telecommunications technologies. The Information Technology Resource Center, which began offering workshops and classes in June 1984, will act as a clearinghouse for nonprofit institutions in Chicago and elsewhere attempting to make decisions about computers.

Sources

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Lominac, Karen. Using Computers for Museum Information Management. Tucson: Arizona State Museum, 1980. Miscellaneous information on computer usage in anthropology museums. Includes bibliographies, glossaries, press and news releases, and panel discussions.

Sarasan, Lenore. Museum Collections and Computers: Report on an ASC Survey. Lawrence, KS. Association of Systematics Collections, 1983. Important work on how computers are used in museums.

Taylor, David. Survey of Computer Use in Science-Technology Museums. Washington, D.C.: Association of Science-Technology Centers, 1981.

ZOOS

ISIS, the International Species Inventory System, is a software system used exclusively throughout the zoological community. ISIS was begun in 1973 with money from the American Association for Zoological Parks and Aquaria, the American Association for Zoological Veterinarians, a private foundation support and a substantial grant from the U.S. Department of the Interior. It is based at the Minnesota Zoological Garden in Apple Valley, Minnesota.

Seventy-five percent of the zoos in the United States use this system which provides interinstitutional communication. Over 51,000 living mammals and birds have been inventoried, and indirectly, tens of thousands of their ancestors in more than 120 institutions in America and more than 50 in Europe, Australia, and South America. ISIS collects information on animals' age, sex, parentage, place of birth, and circumstances of death. The computer program is now being redesigned to accommodate increasingly sophisticated information. The inclusion of reptiles and amphibians in the inventory has long been planned and is now under way. Once the inventory is complete, the AAZPA will be in a position to direct the future survival of captive populations. This has bene started through AAZPA's distribution of a formal Species Survival Plan, which aims to strengthen and coordinate captive programs so that zoos can help the worldwide effort to preserve vanishing species.

The museum conservation survey yielded a very high percentage (94 percent) of zoos and aquariums with inventoried collections. Forty-three percent use only manual files, 13 percent use automated systems while 41 percent use both manual and computer files. Seventy-seven percent of collections are catalogued, 64 percent using only manual files, 13 percent only automated files, and 10 percent using both. Nineteen of the 39 respondent museums use ISIS.

SOFTWARE SYSTEMS USED BY MUSEUMS FOR COLLECTIONS MANAGEMENT FROM THE MUSEUMS COLLECTIONS SURVEY

Museums that use computers for collections management were asked which kind of software they use. Seventy-five museums responded, and with the exceptions of ISIS, GRIPHOS, SELGEM, and PSDC, there is little unity in the responses. A majority of institutions use commercially available data-base programs sometimes customized for the particular museums. The following is a list of software systems used by museums responding to the survey:

Museum-Developed Programs

ISIS -- 19 zoos/aquariums, 1 nature center
SELGEM -- 5 musems (1 art, 2 natgural history, 1 history, 1 historic site)
PDSC -- 3 botanical gardens
GRIPHOS -- 2 museums (1 historic site, 1 natural history)
TAXIR -- 1 natural history museum, 1 botanical garden

Other Customized Software Used By at Least One Museum

San Diego Animal Collection System -- 9 museums (4 history, 1 natural history, 1 anthropology, 1 general, 1 art)
ORNCAT; Yale Computer System; ISTORE
INFORMATION; DARIS; CUMAS

Commercial Packages

DBase II -- 7 museums (4 natural history, 1 zoo, 1 general, 1 science)
IBM PFS file -- 4 musems (1 art, 1 history, 1 general, 1 children's)
CONDOR -- 2 musems (1 art, 1 general)

Other Commercial Software, Specified By at Least One Museum

SPIRES, ADABAS; LIST HANDLER; R:BASE 4,000; BASIC; WANG FILE; University of Iowa System; Standard Base Manager; Smith and Abbott; Data Keep; Savvy; Visifile

Other

OCLC -- 2 museums (1 art, 1 history)

Responses were supplied by the following institutions: art (9); botanical gardens (7); children's (2); history (12); general (5); natural history (11); nature center (3); science (4); and zoos/aquariums (23). Several museums specified the use of more than one program.